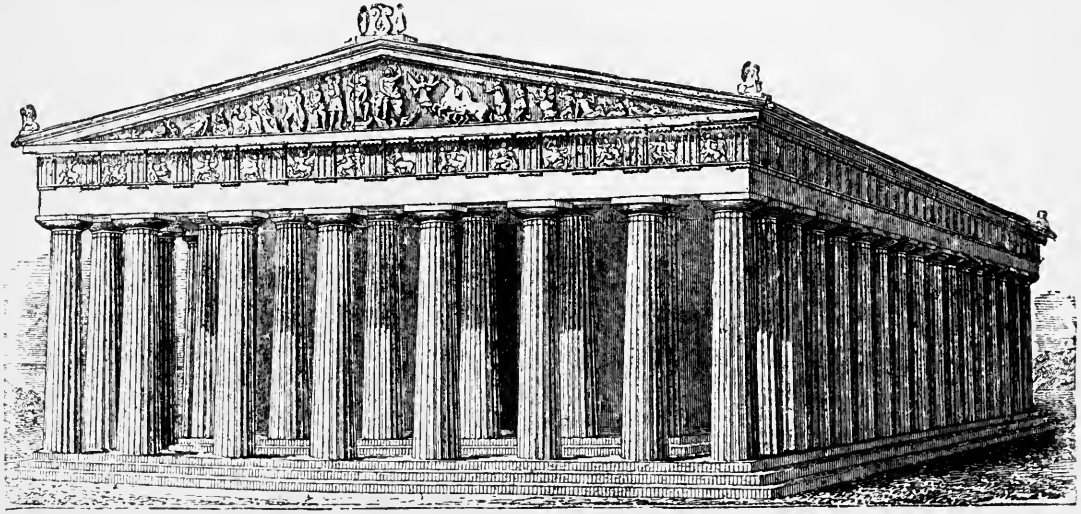
C. L. S. C. Required Literature for 1892-93.

Grecian History. *J. R. Joy.* - - - - - -	$1.00
Callias, an Historical Romance. *A. J. Church.*	1.00
The United States and Foreign Powers. *W. E. Curtis.* - - - - - - - - - - - -	1.00
Greek Architecture and Sculpture. *Smith and Redford.* - - - - - - - - - - -	.50
Classic Greek Course in English. *W. C. Wilkinson.*	1.00
A Manual of Christian Evidences. *G. P. Fisher.*	.50
The Chautauquan (12 numbers). - - - - -	2.00



THE PARTHENON AT ATHENS, AS IT WAS SEEN IN THE TIME OF PERICLES, ABOUT B. C. 438.

Chautauqua Reading Circle Literature

GREEK ARCHITECTURE

BY

T. ROGER SMITH, F. R. I. B. A.

AND

GREEK SCULPTURE

BY

GEORGE REDFORD, F. R. C. S.

WITH AN INTRODUCTION BY

WILLIAM H. GOODYEAR

With Many Illustrations

MEADVILLE PENNA
FLOOD AND VINCENT
The Chautauqua-Century Press
1892

The required books of the C. L. S. C. are recommended by a Council of six. It must, however, be understood that recommendation does not involve an approval by the Council, or by any member of it, of every principle or doctrine contained in the book recommended.

Published by arrangement with Sampson Low, Marston and Company, Limited, London.

The Chautauqua-Century Press, Meadville, Pa., U. S. A.
Electrotyped, Printed, and Bound by Flood & Vincent.

PREFACE.

THE customary discrimination and wisdom of the managers of the Chautauqua Literary and Scientific Circle are apparent in their choice of the compendiums on Greek architecture and Greek sculpture which are united in this book. Both are written by English scholars of distinguished reputation. Both are written in a scientific spirit and in such manner as to supply much exact matter-of-fact information, without sacrificing popular quality.

Some slight additions and corrections, made necessary by discoveries or by revisions of scientific opinion, dating since the original books were written, have been entered in an appendix.

My duty in the preparation of a preface is to point out, first, that this work on Greek architecture and sculpture is part of a course of reading on Greek history ["Grecian History," by James R. Joy] and to remark that the general historical information supplied by this other book is a most essential introduction to the present work. All interest in ancient art presupposes an interest in ancient history as well as some general knowledge about it. On the other hand it is true that ancient art is a most valuable means itself of teaching ancient history. Not only is the impulse offered to the imagination by the actually existing relics and tangible remnants of the past a point to be considered; but these relics are themselves illustrations of the lives of the Greeks which are superior to any verbal or literary descriptions of a bygone age. The life of a nation cannot be described by a chronicle of events.

Greek life is not only suggested by works of Greek art, but it was also actually incorporated in them.

Since printing has displaced the arts of form as a means of conveying ideas, it is difficult for us to realize from our own conceptions of art—considered as a fact in modern life—how much the arts of design were bound up with the everyday lives and everyday needs of ancient peoples. The superiority of ancient Greek art to our own is explained by the fact that its mission was superior ; that it was a means of ideal national expression and popular national instruction, which has now been displaced by printed literature. The technical quality of an art is dependent on the amount of public patronage and of public practice. Whatever is done much is done well, and the only stable condition of good art is a large public demand for it.

In Greek sculpture and relief, the Greeks had their Bible ; they expressed in them their religious beliefs and ideals. These arts were also the counterpart and summary of their whole national literature. These arts were moreover an epitome and reproduction of that life of the gymnasium and of physical exercise which was the basis of their whole political existence, and which was originally called into being by their system of military training.

It is therefore as a means to a knowledge of the Greeks themselves that we should consider the study of Greek art important. Considering that the Greeks are the fathers of political self-government, that their system of individual training and state education was of unsurpassed excellence, that their refinement and simplicity of taste have furnished models for all later time, and that the development of European history and European civilization began with them, and considering also that their art has a comprehensive significance for their history at large—it is clear that its study is a really necessary branch of liberal culture.

Although the direct relations of Greek art to Greek life and religion are most obvious in their statuary and reliefs, and although the implications of their refinement and thoughtful minds are perhaps not so immediately obvious in their architecture, this is only because the connection between cause and effect in this case requires some explanation and presupposes

a not always recognized, but very positive, relation between a nation's life and a nation's architecture.

Aside from its relations to Greek life, the study of Greek architecture is undoubtedly the best means of reaching the important principle that all good constructive art, of whatever time or nation, implies and demands constructive thought and constructive common sense. Aside from this value of the study of Greek architecture as a means to establishing artistic principles for construction in general, it should also be remembered that multitudes of modern buildings exhibit Greek construction or employ Greek details—that these details are often misused and corrupted, and that a study of the original forms is essential to the criticism of such misuses and corruptions. Such study is also essential to comprehension of the matter-of-fact history of modern architectural styles. This point has, however, been developed sufficiently by the author of the compendium of Greek architecture.

I have so far emphasized the importance of the studies furthered by this book as being a branch of history, because it is a common thing to consider the Greeks as having had a special aptitude for "art," with implication of corresponding deficiencies in other fields of life; whereas the fact is that their art represents their aptitudes, character, and life in general.

Let me finish my preface by pointing out that all book studies of Greek art, and all reading about Greek art, or any other art, are the very least part of the matter in hand, which is to know the monuments themselves. All books on the subject are purely a means to this end. The objects themselves are the things which must train the taste and train the eye, and this training of taste and eye cannot in the least degree be achieved through any book. In fact the whole aim and object of art training is to supplement literature, not to make literature; to exalt the importance of forms and pictures, not to exalt the importance of reading and writing about them. If this be so, it is clear that a reader or a student who has finished this book may still have the all important work before him quite unfinished, which is to know the objects which the book describes. Undoubtedly engravings are an assistance to some extent, and these the work has very liberally furnished, but these are rather a means to illustrating

the book, and are not to be considered in any sense as making a knowledge of the originals less important. It is true that we cannot all make travels in Greece to inspect Greek ruins, and that we cannot all make visits to the European museums which contain the works of the Greek chisel. By a knowledge of the actual objects I understand, however, a knowledge of photographs, casts, and models of them. Book engravings are inadequate because they cannot possibly represent the multitude of objects, and because they lack the veracity of photographs and casts. Every possible access to the various cast collections which are being so numerously founded in this country is an indispensable accompaniment to the study of this book. In default of such access it must be said that photographs will very ably make good this deficiency, but that contact at least with abundant photographic illustration is really indispensable. I should therefore define the practical aim of this book to be that of bringing the reader in contact with photographs or casts of Greek sculpture, and to be that of bringing the reader in contact with models and casts and photographs of Greek architecture. These casts, in the case of architecture, must naturally be confined to details—that is, to simple capitals, shafts, bases, sections of entablature, etc. The largest and best American collections of casts of Greek architecture and Greek sculpture are, at date of writing, in New York and Boston. The New York Museum has by far the largest collection of models and casts in architecture. The Boston Museum has by far the best and largest collection of casts in sculpture (1892). I have no doubt that the Chautauqua Circle will take proper means to recommend and make accessible good collections of photographs.

WM. H. GOODYEAR.

CONTENTS

GREEK ARCHITECTURE

GREEK SCULPTURE

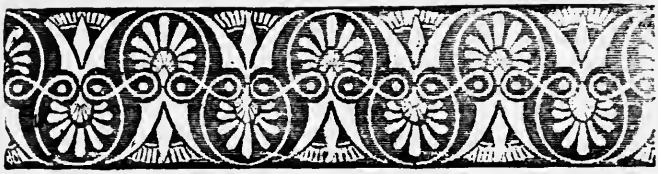


Fig 1.—Greek Honeysuckle Ornament.

GREEK ARCHITECTURE AND SCULPTURE.

CHAPTER I.

GREEK ARCHITECTURE.

Buildings of the Doric Order.

THE architecture of Greece has a value far higher than that attaching to any of the styles which preceded it, on account of the beauty of the buildings and the astonishing refinement which the best of them display. This architecture has a further claim on our attention as being virtually the parent of that of all the nations of Western Europe. We cannot put a finger upon any features of Egyptian, Assyrian, or Persian architecture the influence of which has survived to the present day except such as were adopted by the Greeks. On the other hand, there is no feature, no ornament, nor even any principle of design which the Greek architects employed that can be said to have now become obsolete. Not only do we find direct reproductions of Greek architecture forming part of the practice of every European country, but we are able to trace to Greek art the parentage of many of the forms and features of Roman, Byzantine, and Gothic architecture, especially those connected with the column and which grew out of its artistic use. Greek architecture did not include the arch and all the forms allied to it, such as the vault and the dome; and, so far as we know, the Greeks abstained from the use of the tower. Examples of both these features were, it is almost certain, as fully

within the knowledge of the Greeks as were those features of Egyptian, Assyrian, and Persian buildings which they employed; consequently it is to deliberate selection that we must attribute this exclusion. Within the limits by which they confined themselves, the Greeks worked with such power, learning, taste, and skill that we may fairly claim for their highest achievement—the Parthenon—that it advanced as near to absolute perfection as any work of art ever has been or ever can be carried.

Greek architecture seems to have begun to emerge from the stage of archaic simplicity about the beginning of the sixth century before the Christian era (600 B. C. is the reputed date of the old Doric Temple at Corinth). All the finest examples were erected between that date and the death of Alexander the Great (323 B. C.), after which period it declined and ultimately gave place to Roman.

The domestic and palatial buildings of the Greeks have decayed or been destroyed, leaving but few vestiges. We know their architecture largely from ruins of public buildings and, to a limited extent, from sepulchral monuments remaining in Greece and in Greek colonies. By far the most numerous and excellent among these buildings are temples. The Greek idea of a temple was different from that entertained by the Egyptians. The building was to a much greater extent designed for external than internal effect. A comparatively small sacred cell was provided for the reception of the image of the divinity, usually with one other cell behind it, which seems to have served as treasury, or sacristy; but there were no surrounding chambers, gloomy halls, or enclosed courtyards, like those of the Egyptian temples, visible only to persons admitted within a jealously guarded outer wall. The temple, it is true, often stood within some sort of precinct, but it was accessible to all. It stood open to the sun and air; it invited the admiration of the passer-by; its most telling features and best sculpture were on the exterior. Whether this may have been, in some degree, the case with Persian buildings, we have few means of knowing, but certainly the attention paid by the Greeks to the outside of their temples offers a striking contrast to the practice of the Egyptians and to what we know of that of the Assyrians.

The temple, however grand, was always of simple form with a gable at each end and in this respect differed entirely from the series of halls, courts, and chambers of which a great Egyptian temple consisted. In the very smallest temple

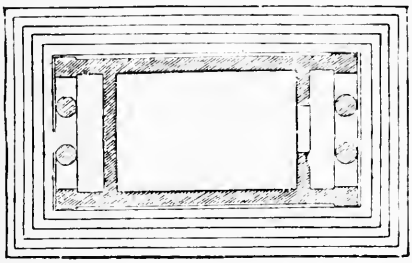


FIG. 2.—PLAN OF A SMALL GREEK TEMPLE IN ANTIS.

at least one of the gables was made into a portico by the help of columns and two pilasters (Fig. 2). More important temples had a larger number of columns and often a portico at each end (Figs. 3 and 10). The most important had columns on the flanks as well as at the front and rear, the sacred cell being, in fact, surrounded by them. It will be apparent from this that the column, together with the superstructure which

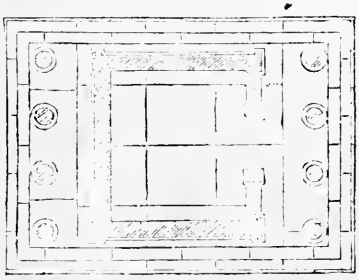


FIG. 3.—PLAN OF A SMALL GREEK TEMPLE.

rested upon it, must have played a very important part in Greek temple architecture and an inspection of any representations of Greek buildings will at once confirm the impression.

We find in Greece three distinct manners, distinguished

largely by the mode in which the column is dealt with. These it would be quite consistent to call "styles," were it not that another name has been so thoroughly appropriated to them that they would hardly now be recognized were they to be spoken of as anything else than "orders." The Greek orders are named the Doric, Ionic, and Corinthian. Each of them presents a different series of proportions, moldings, features, and ornaments, though the main forms of the buildings are the same in all. The column and its entablature (the technical name for the frieze, architrave, and cornice, forming the usual superstructure), being the most prominent features in every such building, have come to be regarded as the index or characteristic from an inspection of which the order and the degree of its development can be recognized, just as a botanist recognizes plants by their flowers. By reproducing the column and entablature, almost all the characteristics of either of the orders can be copied; and hence a technical and somewhat unfortunate use of the word "order" to signify these features only has crept in and has overshadowed and to a large extent displaced its wider meaning. It is difficult in a book on architecture to avoid employing the word "order" when we have to speak of a column and its entablature because it has so often been made use of in this sense. The student must, however, always bear in mind that this is a restricted and artificial sense of the word and that the column belonging to any order is always accompanied by the use throughout the building of the appropriate proportions, ornaments, and moldings belonging to that order.

The origin of Greek architecture is a very interesting subject for inquiry, but, owing to the disappearance of almost all very early examples of the styles, it is necessarily obscure. Such information, however, as we possess, taken together with the internal evidence afforded by the features of the matured style, points to the influence of Egypt, to that of Assyria and Persia, and to an early manner of timber construction—the forms proper to which were retained in spite of the abandonment of timber for marble—as all contributing to the formation of Greek architecture.

In Asia Minor a series of monuments, many of them rock-cut, has been discovered, which throws a curious light upon the

early growth of architecture. We refer to tombs found in Lycia and attributed to about the seventh century B. C. In these we obviously have the first work in stone of a nation of shipbuilders. A Lycian tomb—such as the one now to be seen, accurately restored, in the British Museum—represents a structure of beams of wood framed together, surmounted by a roof which closely resembles a boat turned upside down. The planks, the beams to which they were secured, and even a ridge similar to the keel of a vessel, all reappear here, showing that the material in use for building was so universally timber that when the tomb was to be "graven in the rock forever" the

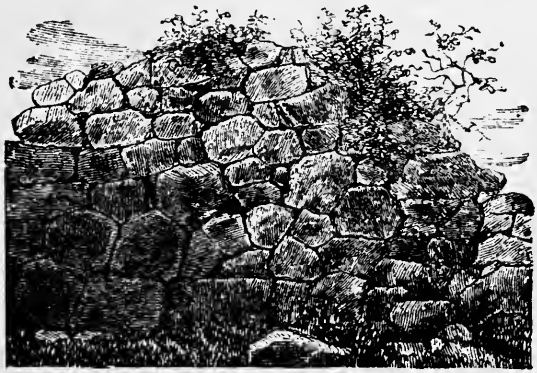


FIG. 4.—ANCIENT GREEK WALL OF UNWROUGHT STONE FROM SAMOTHRACE.

forms of a timber structure were those that presented themselves to the imagination of the sculptor. In other instances the resemblance to shipwrights' work disappears and that of the carpenter is followed by that of the mason. Thus we find imitations of timber beams framed together and of overhanging low-pitched roofs, in some cases carried on unsquared rafters lying side by side, in several of these tombs.

What happened on the Asiatic shore of the Ægean must have occurred on the Greek shores; and, though none of the very earliest specimens of reproduction in stone of timber structures has come down to us, there are abundant traces,

as we shall presently see, of timber originals in buildings of the Doric order. Timber originals were not, however, the only sources from which the early inhabitants of Greece drew their inspiration.

Constructions of extreme antiquity and free from any appearance of imitating structures of timber mark the sites of the oldest cities of Greece, Mycenæ and Orchomenos, for example, the most ancient being Pelasgic city walls of unwrought stone (Fig. 4). The so-called Treasury of Atreus at Mycenæ, a circular underground chamber 48 feet 6 inches in diameter, and with a pointed vault, is a well-known specimen of more regular yet archaic building. Its vault is constructed of stones corbeling over one another and is not a true arch

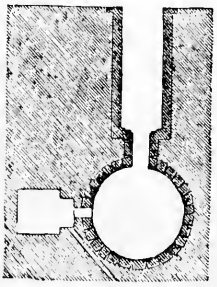


FIG. 5.—PLAN OF TREASURY OF ATREUS AT MYCENÆ.

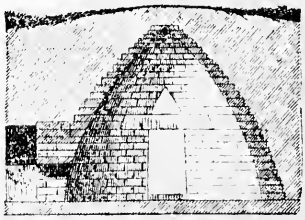


FIG. 6.—SECTION OF THE TREASURY OF ATREUS AT MYCENÆ.

(Figs. 5, 6). The treatment of an ornamental column found here and of the remains of sculptured ornaments over a neighboring gateway called the Gate of the Lions is of very Asiatic character and seems to show that whatever influences had been brought to bear on their design were Oriental.

A wide interval of time and a great contrast in taste separate the early works of Pelasgic masonry and even the chamber at Mycenæ from the rudest and most archaic of the remaining Hellenic works of Greece. The Doric temple at Corinth is attributed, as has been stated, to the seventh century B. C. This was a massive masonry structure with extremely short, stumpy columns and strong moldings, but presenting the main features of the Doric style, as we know it,

in its earliest and rudest form. Successive examples (Figs. 7, 8, and 9) show increasing slenderness of proportions and refinement of treatment, and are accompanied by sculpture which approaches nearer and nearer to perfection; but in the later and best buildings, as in the earliest and rudest, certain forms are retained for which it seems impossible to account except on the supposition that they are reproductions in stone or

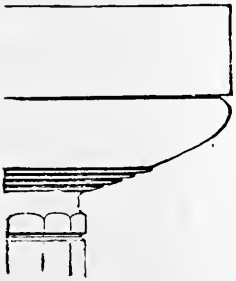


FIG. 7.—GREEK DORIC CAPITAL FROM SELINUS.

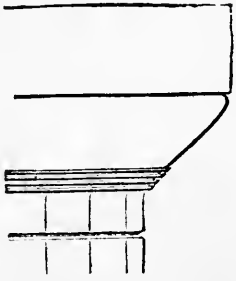


FIG. 8.—GREEK DORIC CAPITAL FROM THE THESEUM.

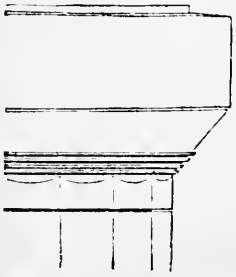


FIG. 9.—GREEK DORIC CAPITAL FROM SAMOTHRACE.

marble of a timber construction. These occur in the entablature while the column is of a type which it is hard to believe is not copied from originals in use in Egypt many centuries earlier.

We will now proceed to examine a fully developed Greek Doric temple of the best period and in doing so we shall be able to recognize the forms referred to in the preceding

paragraph as we come to them. The most complete Greek Doric temple was the Parthenon, the work of the architect

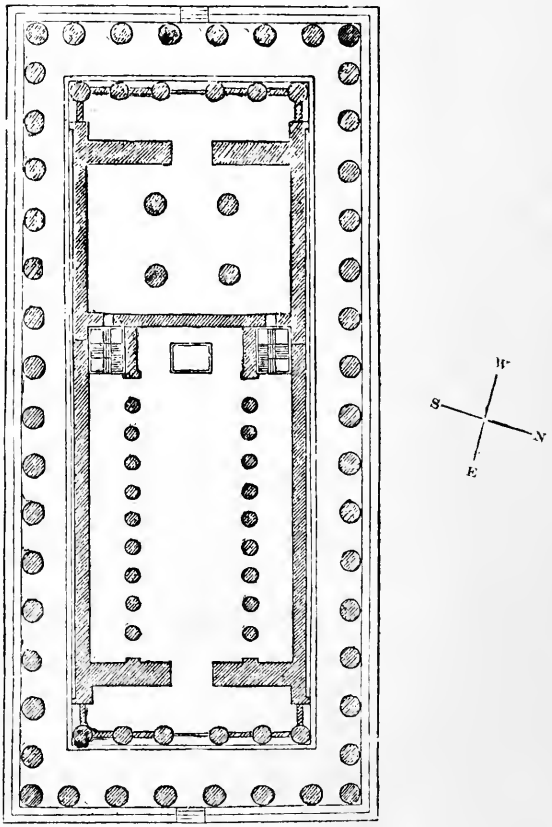


FIG. 10.—PLAN OF THE PARTHENON AT ATHENS.

Ictinus, the temple of the Virgin Goddess Athene (Minerva) at Athens, and on many accounts this building will be the best to select for our purpose (Frontispiece).

The Parthenon at Athens stood on the summit of a lofty rock and within an irregularly shaped enclosure, something like a cathedral close, entered through a noble gateway, called the Propylæa. The temple itself was of perfectly regular plan and stood quite free from dependencies of any sort. It consisted of a *cella*, or sacred cell, in which stood the statue of the goddess, with one chamber (the treasury) behind. In the *cella* and also in the chamber behind there were columns. A series of columns surrounded this building,

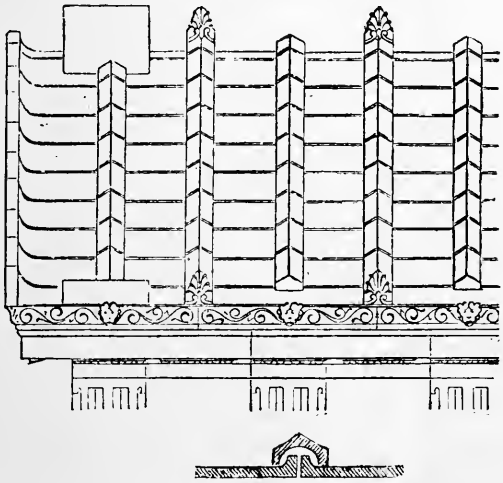


FIG. 11.—THE ROOF OF A GREEK DORIC TEMPLE, SHOWING THE MARBLE TILES.

and at either end was a portico, eight columns wide and two deep. There were two pediments, or gables, of flat pitch, one at each end. The whole stood on a basement of steps; the building, exclusive of the steps, being 228 feet long by 101 feet wide and 64 feet high. The columns were each 34 feet, 3 inches high and more than 6 feet in diameter at the base; a portion of the shaft and of the capital of one is in the British Museum, and a magnificent reproduction, full size, of the column and its entablature may be seen at the École des Beaux Arts, Paris. The ornaments consisted almost exclusively of sculpture of

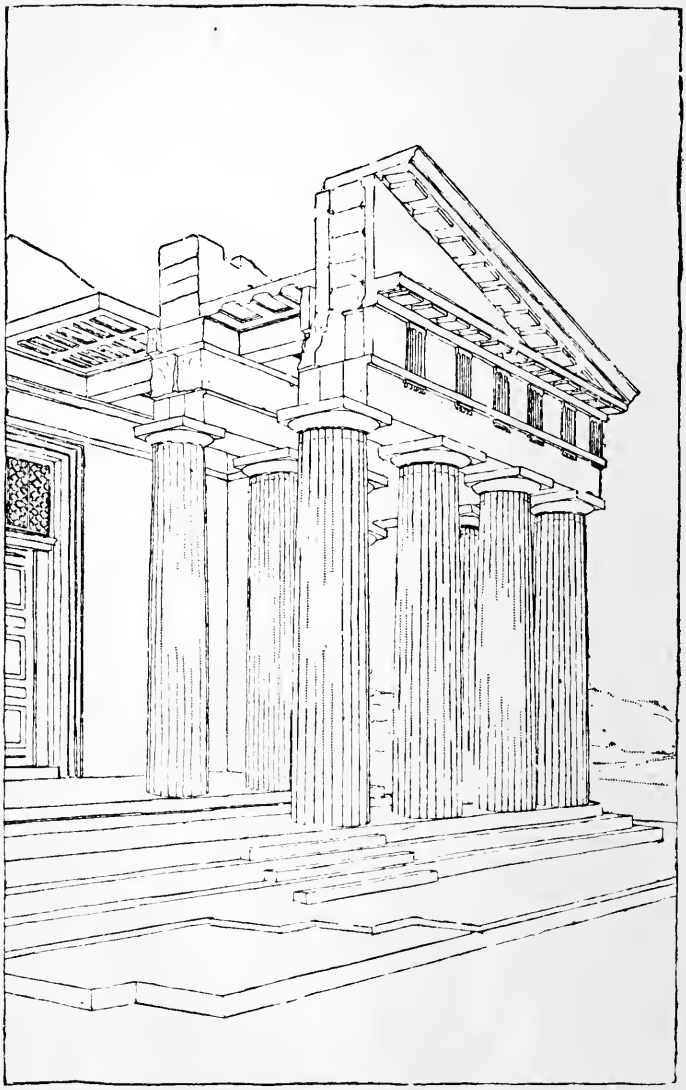


Fig. 12.—A Constructional View of the Parthenon.

the very finest quality, executed by or under the superintendence of Phidias. Of this sculpture many specimens are now in the British Museum. They are called the "Elgin Marbles," after Lord Elgin, who brought them from Greece in 1816 and afterwards sold them to the British government.

The construction of this temple was of the most solid and durable kind, marble being the material used; and the workmanship was most careful in every part of which remains have come down to us. The roof was, no doubt, made of timber and covered with marble tiles (Fig. 11), carried on

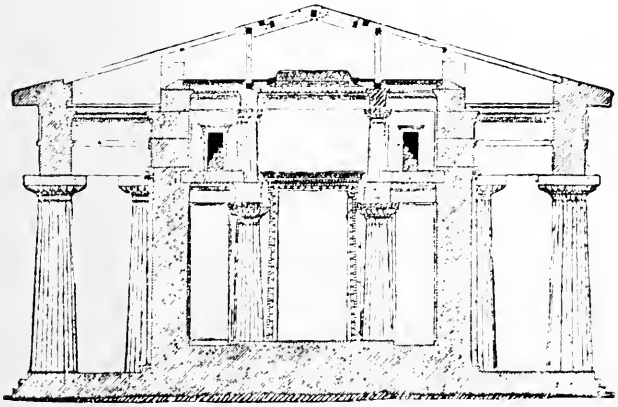


FIG. 13.—SECTION OF THE GREEK DORIC TEMPLE AT PÆSTUM. AS RESTORED BY BÖTTICHER.

a timber framework, all traces of which have entirely perished; and the mode in which it was constructed is a subject upon which authorities differ, especially as to what provision was made for the admission of light. The internal columns, found in other temples as well as in the Parthenon, were no doubt employed to support this roof, as is shown in Böttticher's restoration of the Temple at Paestum, which we reproduce (Fig. 13), though without pledging ourselves to its accuracy; for, indeed, it seems probable that something more or less like the clerestory of a Gothic church must have been

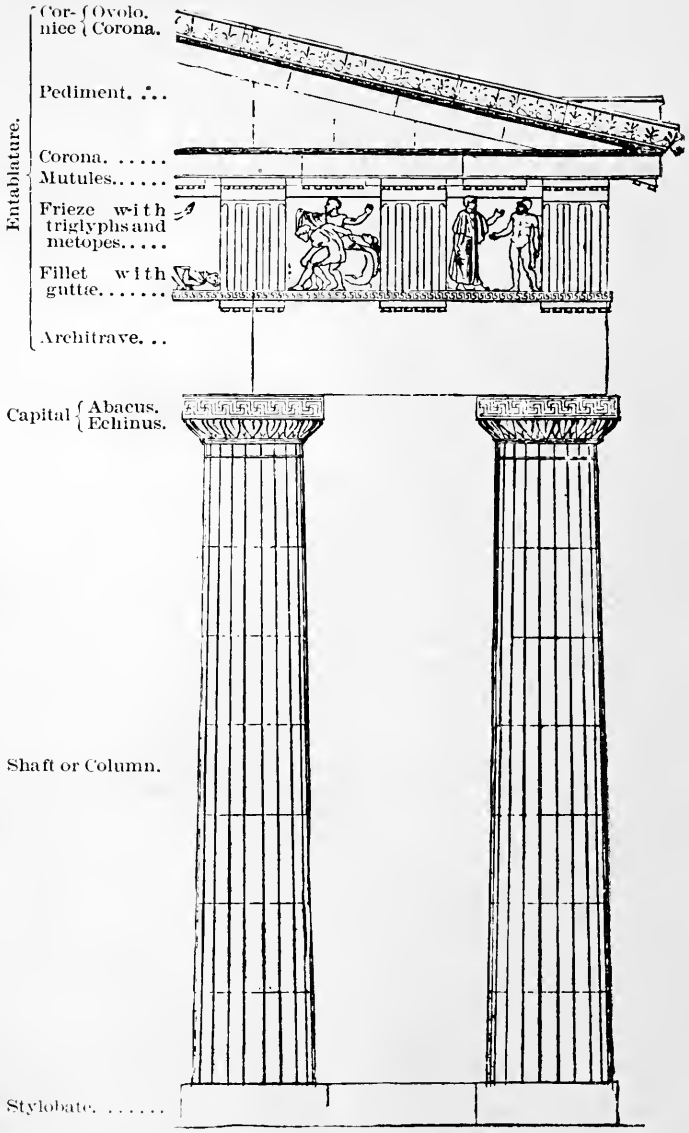


Fig. 14.—The Greek Doric Order from the Theseum.

employed to admit light to these buildings, as we know was the case in the Hypostyle Hall at Karnak. But this structure, if it existed, has entirely disappeared.

The order of the Parthenon was Doric, and the leading proportions were as follows: The column was 5.56 diameters high; the whole height, including the stylobate, or steps, might be divided into nine parts, of which two go to the steps,

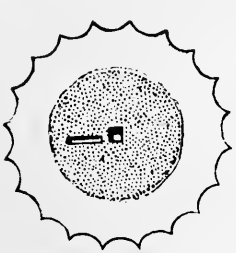


FIG. 15.—PLAN OF A GREEK DORIC COLUMN.

FIG. 16.—THE FILLETS UNDER A GREEK DORIC CAPITAL.

six to the column, and one to the entablature, or superstructure.

The Greek Doric order is without a base; the shaft of the column springs from the top step and tapers toward the top, the outline being not, however, straight, but of a subtle curve, known technically as the *entasis* of the column. This shaft is channeled with twenty shallow channels,* the ridges separating one from another being very fine lines. A little below the molding of the capital, fine sinkings, forming lines round the shaft, exist, and above these the channels of the flutes are stopped by or near the commencement of the projecting molding of the capital. This molding, which is of a section calculated to convey the idea of powerful support, is called the *echinus*, and its lower portion is encircled by a series of fillets (Fig. 16), which are cut into it. Above the *echinus*, which is circular, like the shaft, comes the highest member—the *abacus* (Fig. 14), a square, stout slab of marble, which completes the capital of the column. The whole is most skillfully designed to convey the idea of sturdy support and yet to clothe the support with grace. The strong proportions of the shaft, the

* In a few instances a smaller number is found.

slight curve of its outline, the lines traced upon its surface by the channels, and even the vigorous, uncompromising planting of it on the square step from which it springs, all contribute to make the column look strong. The check given to the vigorous upward lines of the channels on the shaft by the first sinkings and their arrest at the point where the capital spreads out, intensified as it is by the series of horizontal lines drawn round the *echinus* by the fillets cut into it, all seem to convey the idea of spreading the supporting energy of the column outward; and the *abacus* appears naturally fitted, itself inert, to receive a burden placed upon it and to transmit its pressure to the capital and shaft below.

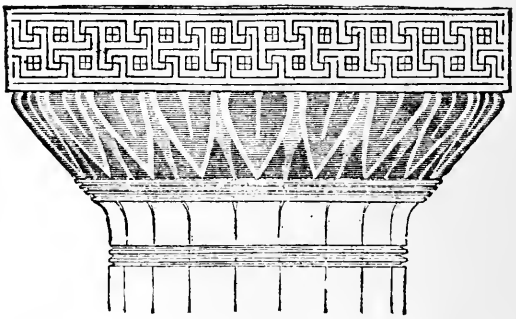


FIG. 17.—CAPITAL OF A GREEK DORIC COLUMN FROM ÆGINA, WITH COLORED DECORATION.

The entablature which formed the superstructure consisted first of a small square beam—the architrave, which, it may be assumed, represents a square timber beam that occupied the same position in the primitive structures. On this rests a second member called the frieze, the prominent feature of which is a series of slightly projecting features, known as triglyphs (three channels) (Fig. 20), from the channels running down their face. These closely resemble, and no doubt actually represent, the ends of massive timber beams, which must have connected the colonnade to the wall of the cell in earlier buildings. At the bottom of each is a row of small pendants, known as *guttæ*, which closely resemble wooden pins, such as would be used to keep a timber beam in place. The

panels between the triglyphs are usually as wide as they are high. They are termed metopes and sculpture commonly

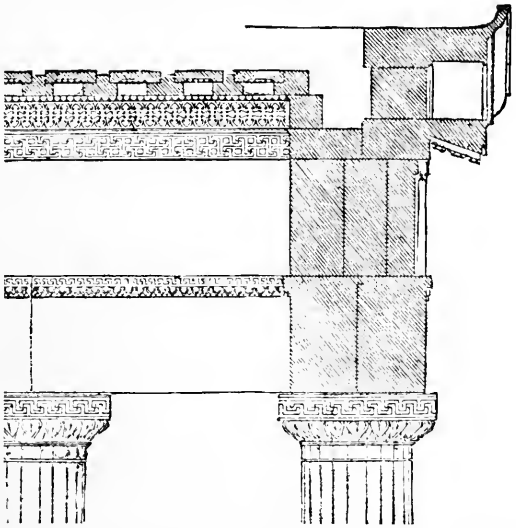


FIG. 18.—SECTION OF THE ENTABLATURE OF THE GREEK DORIC ORDER.

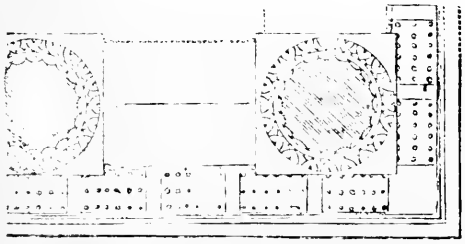


FIG. 19.—PLAN, LOOKING UP, OF PART OF A GREEK DORIC PERISTYLE.

occupies them. The third division of the entablature, the cornice, represents the overhanging eaves of the roof.

The cornices employed in classic architecture may be almost

invariably subdivided into three parts: the supporting part, which is the lowest, the projecting part, which is the middle, and the crowning part, which is the highest division of the cornice. The supporting part in a Greek Doric cornice is extremely small. There are no moldings, such as we shall find in almost every other cornice, calculated to convey the idea of contributing to sustain the projection of the cornice, but there are slabs of marble, called mutules (Fig. 21), dropping toward the outer end, of which one is placed over each triglyph and one between every two. These seem to recall, by their shape, their position, and their slope alike, the ends of

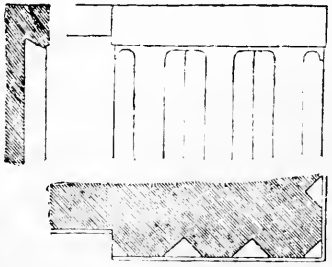


FIG. 20.—DETAILS OF THE TRIGLYPH.

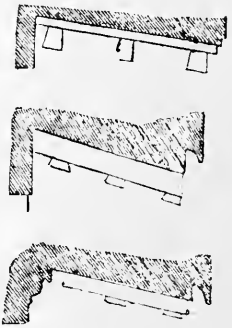


FIG. 21.—DETAILS OF THE MUTULES.

the rafters of a timber roof; and their surface is covered with small projections, which resemble the heads of wooden pins, similar to those already mentioned. The projecting part, in this as in almost all cornices, is a plain upright face of some height, called "the corona," and recalling probably a "facia," or flat, narrow board such as a carpenter of the present day would use in a similar position, secured in the original structure to the ends of the rafters and supporting the eaves. Lastly the crowning part is, in the Greek Doric, a single convex molding, not very dissimilar in profile to the ovolo of the capital and forming what we commonly call an eaves-gutter.

At the ends of the building the two upper divisions of the

cornice—namely, the projecting corona and the crowning ovolo—are made to follow the sloping line of the gable, a second corona being also carried across horizontally in a manner which can be best understood by inspecting a diagram of the corner of a Greek Doric building (Fig. 14); and the triangular space thus formed was termed a pediment, and was the position in which the finest of the sculpture with which the building was enriched was placed.

In the Parthenon a continuous band of sculpture ran around the exterior of the cell near the top of the wall.

One other feature was employed in Greek temple architecture. The *anta* was a square pillar or pier of masonry attached to the wall and corresponded very closely to our pilaster; but its capital always differed from that of the columns in the neighborhood of which it was employed. The *antæ* of the Greek Doric order, as employed in the Parthenon,

FIG. 22.—ELEVATION AND SECTION OF THE CAPITAL OF A GREEK ANTA, WITH COLORED DECORATIONS.

have a molded base, which it will be remembered is not the case with the column, and their capital has for its principal feature an under-cut molding, known as the bird's beak, quite dissimilar from the ovolo of the capital of the column (Fig. 22). Sometimes the portico of a temple consisted of the side walls prolonged and ending in two *antæ* with two or more columns standing between them.

The Parthenon presents examples of the most extraordinary refinements in order to correct optical illusions. The delicacy and subtlety of these are extreme, but there can be no manner of doubt that they existed. The best known correction is the diminution in diameter, or taper, and the *entasis*, or convex curve of the tapered outline of the shaft of the column. Without the taper, which is perceptible enough in the order of this building, and much more marked in the order of earlier build-

ings, the columns would look top-heavy; but the *entasis* is an additional optical correction to prevent their outline from appearing hollowed, which it would have done had there been no curve. The columns of the Parthenon have shafts that are over 34 feet high and diminish from a diameter of 6.15 feet at the bottom to 4.81 feet at the top. The outline between these points is convex, but so slightly so that the curve departs at the point of greatest curvature not more than three fourths of an inch from the straight line joining the top and bottom. This is, however, just sufficient to correct the tendency to look hollow in the middle.

A second correction is intended to overcome the apparent tendency of a building to spread outward toward the top. This is met by inclining the columns slightly inward. So slight, however, is the inclination, that were the axes of two columns on opposite sides of the Parthenon continued upward till they met, the meeting point would be 1,952 yards, or in other words, more than one mile from the ground.

Another optical correction is applied to the horizontal lines. In order to overcome a tendency which exists in all long lines to seem as though they droop in the middle, the lines of the architrave, of the top step, and of other horizontal features of the buildings are all slightly curved. The difference between the outline of the top step of the Parthenon and a straight line joining its two ends is at the greatest only just over two inches.

The last correction which it is necessary to name here was applied to the vertical proportions of the building. The principles upon which this correction rests have been demonstrated by Mr. John Pennethorne;* and it would hardly come within the scope of this volume to attempt to state them here; suffice it to say that small additions, amounting in the entire height of the order to less than five inches, were made to the heights of the various members of the order, with a view to secure that from one definite point of view the effect of foreshortening should be exactly compensated and so the building should appear to the spectator to be perfectly proportioned.

The Parthenon, like many, if not all Greek buildings, was

* "Geometry and Optics of Ancient Architecture."

profusely decorated with colored ornaments, of which nearly every trace has now disappeared, but which must have contributed largely to the splendid beauty of the building as a whole, and must have emphasized and set off its parts. The ornaments known as Doric frets were largely employed. They consist of patterns made entirely of straight lines interlacing, and, while preserving the severity which is characteristic of the style, they permit of the introduction of considerable richness.

The principal remaining examples of fragments of Greek Doric may be enumerated as follows:

IN GREECE.

Temple of (?) Athene, at Corinth, ab. 650 B. C.
Temple of (?) Zeus, in the island of Ægina, ab. 550 B. C.
Temple of Theseus (Theseum), at Athens, 465 B. C.
Temple of Athene (Parthenon), on the Acropolis at Athens, fin. 438 B. C.
The Propylæa, on the Acropolis at Athens, 436–431 B. C.
Temple of Zeus at Olympia.
Temple of Apollo Epicurius, at Bassæ,* in Arcadia (designed by Ictinus).
Temple of Apollo Epicurius, at Phigalia, in Arcadia (built by Ictinus).
Temple of Athene, on the rock of Sunium, in Attica.
Temple of Nemesis, at Rhamnus, in Attica.
Temple of Demeter (Ceres), at Eleusis, in Attica.

IN SICILY AND SOUTH ITALY.

Temple of (?) Zeus, at Agrigentum, in Sicily (begun B. C. 480).
Temple of Egesta (or Segesta), in Sicily.
Temple of (?) Zeus, at Selinus, in Sicily (? ab. 410 B. C.).
Temple of (?) Athene, at Syracuse, in Sicily.
Temple of Poseidon, at Pæstum, in South Italy (? ab. 550 B. C.).

* ? Exterior Doric—Interior Ionic.

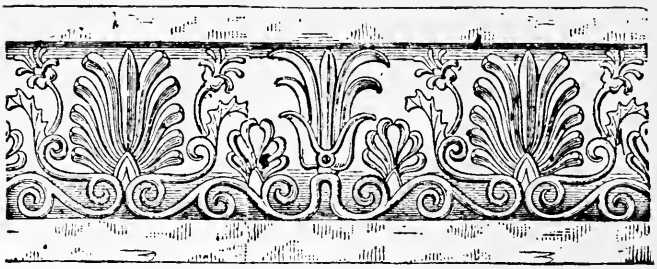


FIG. 23.—PALMETTE AND HONEYSUCKLE.

CHAPTER II.

GREEK ARCHITECTURE.

Buildings of the Ionic and Corinthian Orders.

THE Doric was the order in which the full strength and the complete refinement of the artistic character of the Greeks were most completely shown. There was a great deal of the spirit of severe dignity proper to Egyptian art in its aspect; but other nationalities contributed to the formation of the many-sided Greek nature, and we must look to some other country than Egypt for the spirit which inspired the Ionic order. This seems to have been brought into Greece by a distinct race and shows marks of an Asiatic origin. The feature which is most distinctive is the one most distinctly Eastern—the capital of the column, ornamented always by volutes, *i.e.* scrolls, which bear a close resemblance to features similarly employed in the columns found at Persepolis. The same resemblance can be also detected in the molded bases and even the shafts of the columns, and in many of the ornaments employed throughout the buildings.

In form and disposition an ordinary Ionic temple was similar to one of the Doric order, but the general proportions are more slender and the moldings of the order are more numerous and more profusely enriched. The column in the Ionic order had a base, often elaborately and sometimes singu-

larly molded (Figs. 31, 32). The shaft (Figs. 24, 26) is of more slender proportions than the Doric shaft. It was fluted, but its channels are more numerous and are separated from one another by broader fillets than in the Doric. The distinctive feature, as in all the orders, is the capital (Figs. 25, 26), which is recognized at a glance by the two remarkable ornaments

FIG. 24.—SHAFT OF IONIC COLUMN SHOWING THE FLUTINGS.

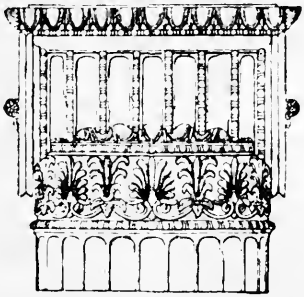


FIG. 26.—IONIC CAPITAL. SIDE ELEVATION.

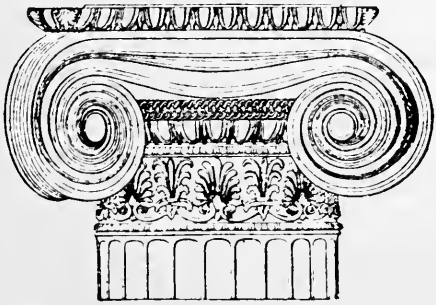


FIG. 25.—IONIC CAPITAL. FRONT ELEVATION.

already alluded to as like scrolls and known as volutes. These generally formed the faces of a pair of cushion-shaped features, which could be seen in a side view of the capital; but sometimes volutes stand in a diagonal position, and in almost every building they differ slightly. The *abacus* is less deep than in the Doric, and it is always molded at the edge, which was

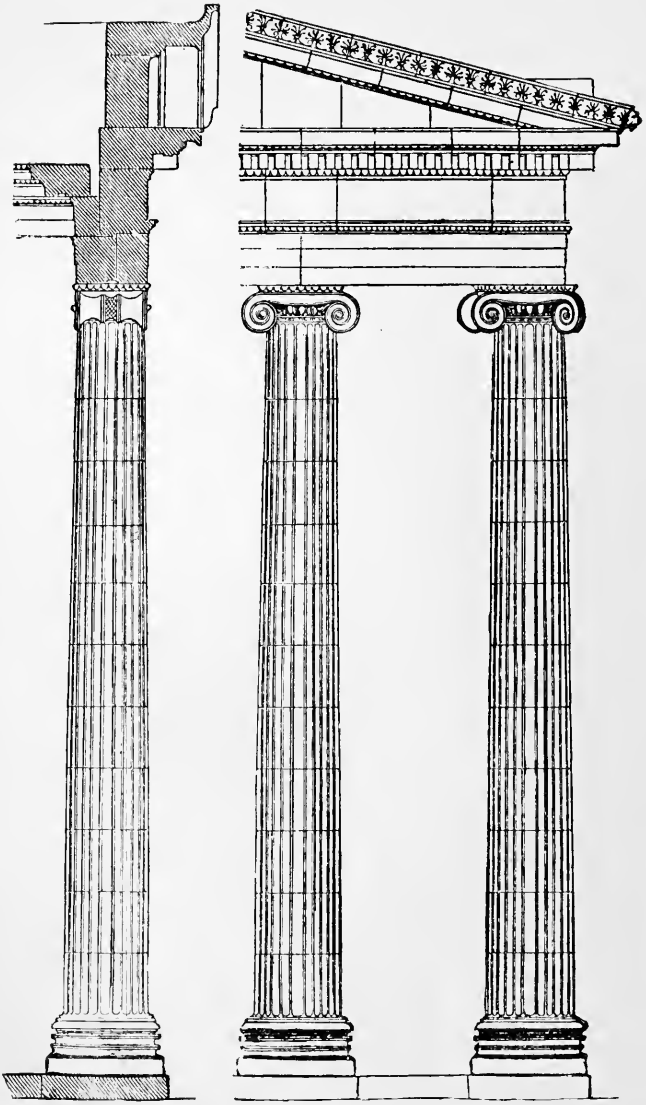


FIG. 27.—THE IONIC ORDER. FROM PRIENE, ASIA MINOR.

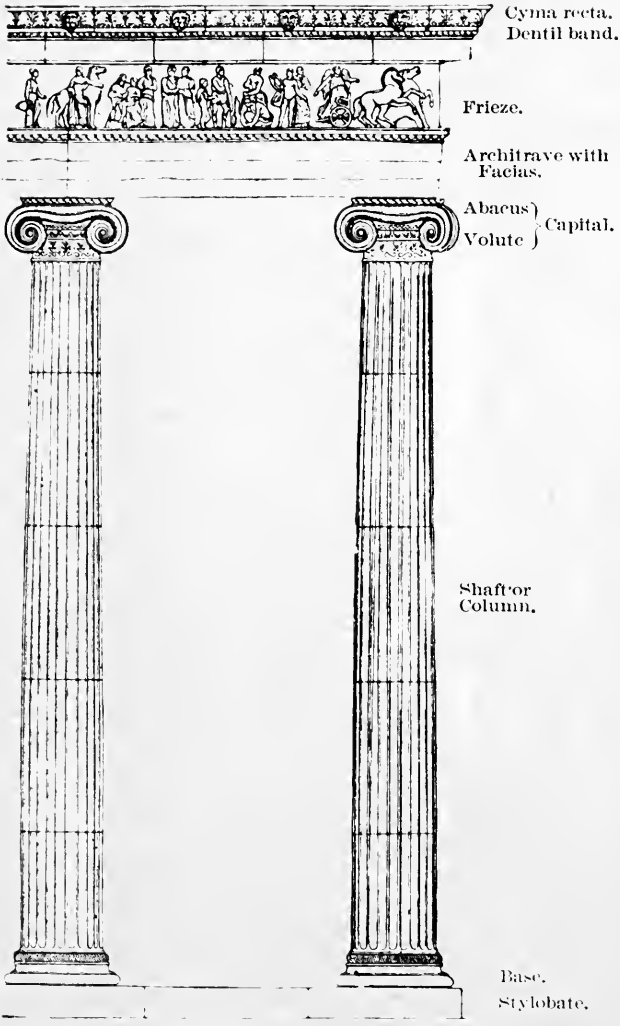


FIG. 28.—IONIC ORDER. FROM THE ERECTHEUM, ATHENS.

never the case with the Doric *abacus*. The entablature (Fig. 27) is, generally speaking, richer than that of the Doric order. The architrave, for example, has three facias instead of being plain. On the other hand, the frieze has no triglyphs, and but rarely sculpture. There are more members in the cornice, several moldings being combined to fortify the supporting portion. These have sometimes been termed "the bed moldings"; and among them occurs one which is almost

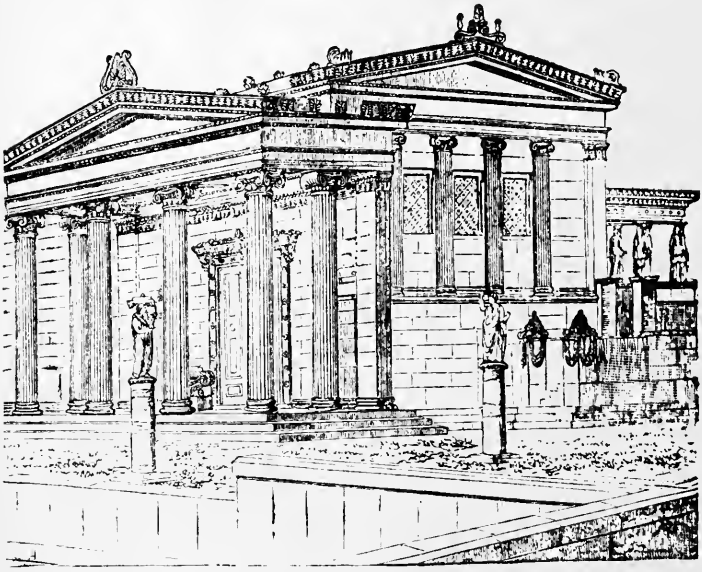


FIG. 29.—NORTH-WEST VIEW OF THE ERECHTHEUM, IN TIME OF PERICLES.

typical of the order, and is termed a dentil band. This molding presents the appearance of a plain square band of stone, in which a series of cuts had been made dividing it into blocks somewhat resembling teeth, whence the name. Such an ornament is more naturally constructed in wood than in stone or marble, but if the real derivation of the Ionic order, as of the Doric, be in fact from timber structures, the dentil band is apparently the only feature in which that origin can now be

traced. The crowning member of the cornice is a partly hollow molding, technically called a *cyma recta*, less vigorous than the convex ovolo, of the Doric: this molding, and some of the bed moldings, were commonly enriched with

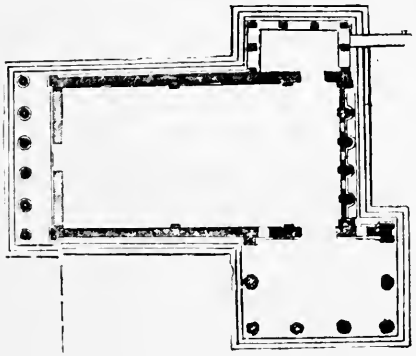


FIG. 30.—PLAN OF THE ERECTHEUM.

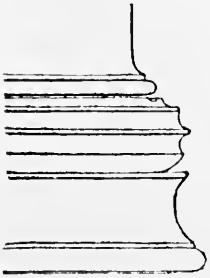


FIG. 31.—IONIC BASE FROM THE TEMPLE OF THE WINGLESS VICTORY (NIKE APTEROS).

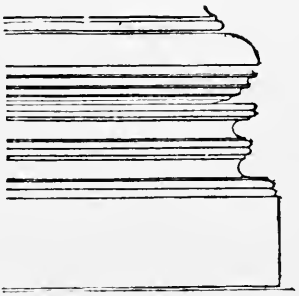


FIG. 32.—IONIC BASE MOLDINGS FROM PRIENE.

carving. Altogether more slenderness and less vigor, more carved enrichment and less painted decoration, more reliance on architectural ornament and less on the work of the sculptor, appear to distinguish those examples of Greek Ionic which have come down to us, as compared with Doric buildings.

The most numerous examples of the Ionic order of which remains exist are found in Asia Minor, but the most refined and complete is the Erechtheum at Athens (Figs 29, 30), a composite structure containing three temples built in juxtaposition, but differing from one another in scale, levels, dimensions, and treatment. The principal order from the Erechtheum (Fig. 28) shows a large amount of enrichment introduced with the most refined and severe taste. Specially remarkable are the ornaments (borrowed from the Assyrian honeysuckle) which encircle the upper part of the shaft at the point where it passes into the capital and the splendid spirals of the volutes (Figs. 25, 26). The bases of the columns in the Erechtheum example are models of elegance and beauty. Those of some of the examples from Asia Minor are overloaded with a vast number of moldings, by no means always producing a pleasing effect (Figs. 31, 32). Some of them bear a close resemblance to the bases of the columns at Persepolis.

The most famous Greek building which was erected in the Ionic style was the Temple of Diana at Ephesus. This temple has been all but totally destroyed, and the very site of it had been for centuries lost and unknown till the energy and sagacity of an English architect (Mr. Wood) enabled him to discover and dig out the vestiges of the building. Fortunately sufficient traces of the foundation have remained to render it possible to recover the plan of the temple completely ; and the discovery of fragments of the order, together with representations on ancient coins and a description by Pliny, have rendered it possible to make a restoration on paper of the general appearance of this famous temple, which must be very nearly, if not absolutely, correct.

The walls of this temple enclosed, as usual, a *cella* (in which was the statue of the goddess), with apparently a treasury behind it ; they were entirely surrounded by a double series of columns with a pediment at each end. The exterior of the building, including these columns, was about twice the width of the *cella*. The whole structure, which was of marble, was planted on a spacious platform with steps. The account of Pliny refers to thirty-six columns, which he describes as "*columnæ celatæ*" (sculptured columns), adding that one was by Scopas, a very celebrated artist. The fortunate discovery

by Mr. Wood of a few fragments of these columns shows that the lower part of the shaft immediately above the base was enriched by a group of figures—about life size—carved in the boldest relief and encircling the column. One of these groups has been brought to the British Museum, and its beauty and vigor enable the imagination partly to restore this splendid feature, which certainly was one of the most sumptuous modes of decorating a building by the aid of sculpture which has ever been attempted; the effect must have been rich beyond description.

It is worth remark that the Erechtheum, which has been already referred to, contains an example of a different, and perhaps a not less remarkable, mode of combining sculpture with architecture. In one of its three porticoes (Fig. 29) the columns are replaced by standing female figures, known as caryatids, and the entablature rests on their heads. This device has frequently been repeated in ancient and in modern architecture, but, except in some comparatively obscure examples, the sculptured columns of Ephesus do not appear to have been imitated.

Another famous Greek work of art, the remains of which have been, like the Temple of Diana, disinterred by the energy and skill of a learned Englishman, belonged to the Ionic order. To Mr. Newton we owe the recovery of the site and considerable fragments of the architectural features of the Mausoleum of Halicarnassus, one of the ancient wonders of the world. The general outline of this monument must have resembled other Greek tombs which have been preserved, such, for example, as the Lion Tomb at Cnidus; that is to say, the plan was square; there was a basement, above this an order, and above that a steep pyramidal roof rising in steps, not carried to a point, but stopping short to form a platform, on which was placed a *quadriga* (four-horsed chariot). This building is known to have been richly sculptured and many fragments of great beauty have been recovered. Indeed it was probably its elaboration, as well as its very unusual height (for the Greek buildings were seldom lofty), which led to its being so celebrated.

The Corinthian order, the last to make its appearance, was almost as much Roman as Greek, and is hardly found in any

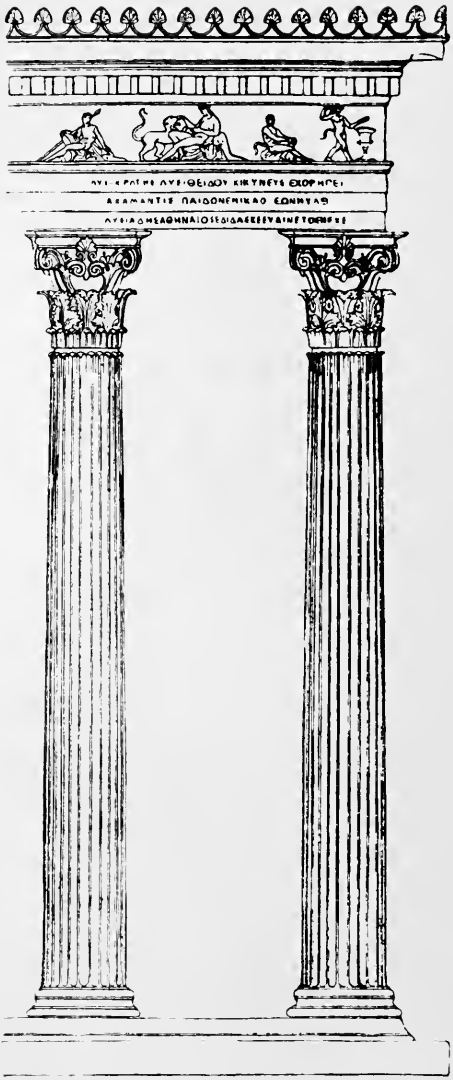


FIG. 33.—THE CORINTHIAN ORDER. FROM THE MONUMENT OF LYSICRATES AT ATHENS.

of the great temples of the best period of which remains exist in Greece, though we hear of its use. For example, Pausanias states that the Corinthian order was employed in the interior of the Temple of Athene Alea at Tegea, built by Scopas, to which a date shortly after the year 394 B. C. is assigned. The examples which we possess are comparatively small works,

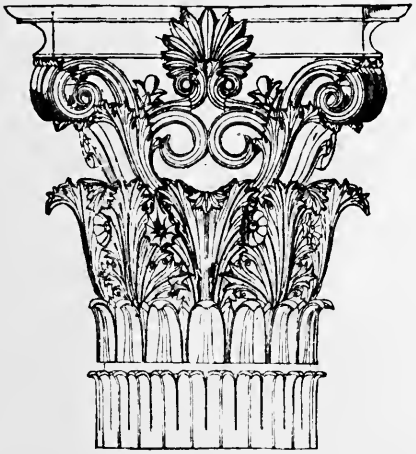


FIG. 31.—CORINTHIAN CAPITAL FROM THE MONUMENT OF LYSICRATES AT ATHENS.

and in them the order resembles the Ionic, but with the important exceptions that the capital of the column is quite different, that the proportions are altogether a little slenderer, and that the enrichments are somewhat more florid.

The capital of the Greek Corinthian order, as seen in the Choragic Monument of Lysicrates at Athens (Fig. 35)—a comparatively miniature example, but the most perfect we have—is a work of art of marvelous beauty (Fig. 34). It retains a feature resembling the Ionic volute, but reduced to a very small size, set obliquely and appearing to spring from the sides of a kind of long bell-shaped termination to the column. This bell is clothed with foliage, symmetrically arranged and much of it studied, but in a conventional manner, from the graceful foliage of the acanthus; between the two small volutes appears

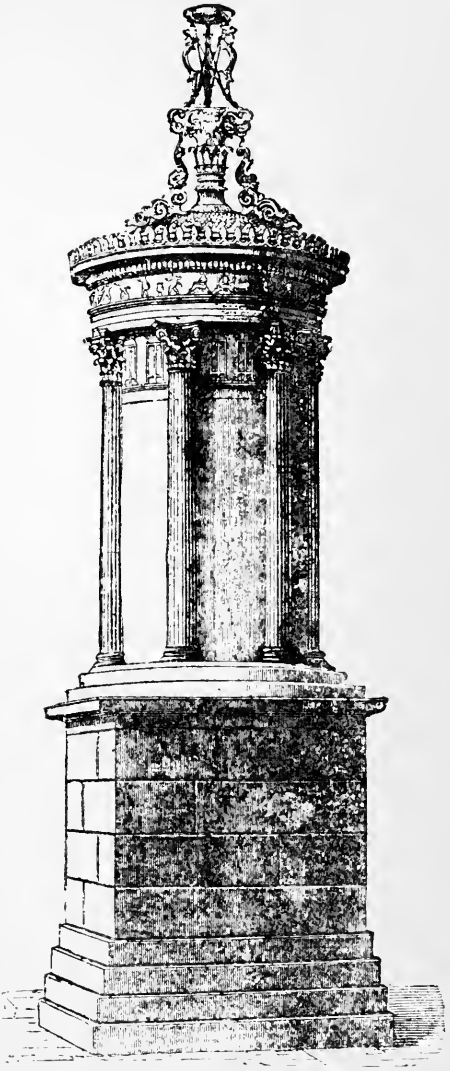


Fig. 35.—Monument to Lysicrates at Athens.

an Assyrian honeysuckle and tendrils of honeysuckle, conventionally treated, occupy part of the upper portion of the capital. The abacus is molded and is curved on the plan and the base of the capital is marked by a very unusual turning-down of the flutes of the columns. The entire structure to which this belonged is a model of elegance and the large sculptured mass of leaves and tendrils with which it is crowned is especially noteworthy.

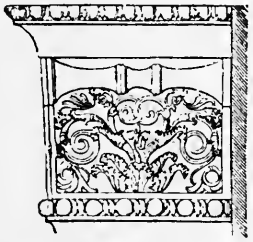


Fig. 36.—Capital of Ante from Miletus. Side View.

A somewhat simpler Corinthian capital and another of very rich design are found in the Temple of Apollo Didymæus at Miletus, where also a very elegant capital for the *antæ*, or pilasters, is employed (Figs. 36, 38). A more ornamental design for a capital could hardly be adopted than that of the Lysicrates example, but there was room for more elaboration in the entablature, and accordingly large richly-sculptured brackets seem to have been introduced and a profusion of ornament was employed. The examples of this treatment which remain are, however, of Roman origin rather than Greek.

The Greek cities must have included structures of great beauty and adapted to many purposes, of which in most cases few traces, if any, have been preserved. We have no remains of a Greek palace or of Greek dwelling houses, although those at Pompeii were probably erected and decorated by Greek artificers for Roman occupation. The *agora* of a Greek city, which was a place of public assembly something like the Roman Forum, is known to us only by descriptions in ancient writers, but we possess some remains of Greek theaters; and

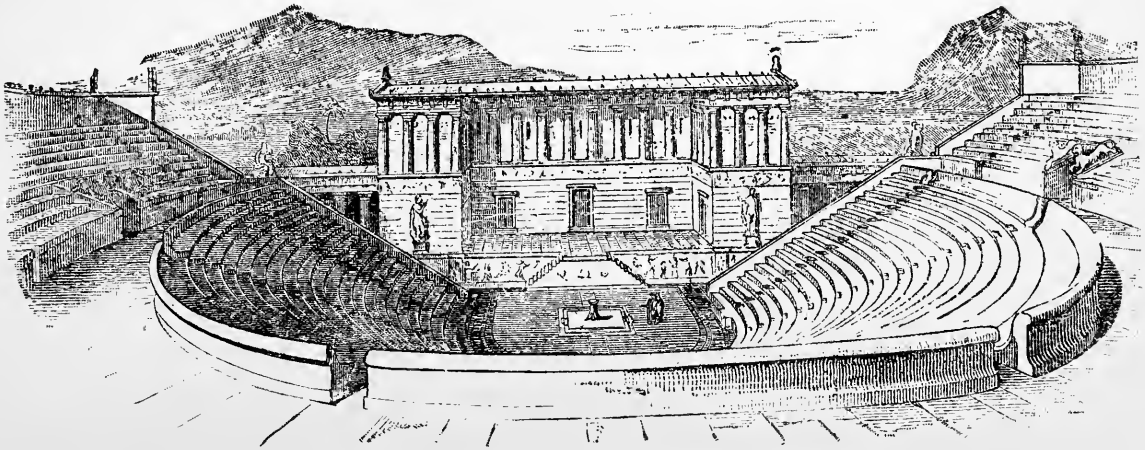


FIG. 37.—RESTORATION OF THE GREEK THEATER OF SEGESTA.

from these, aided by Roman examples and written descriptions, can understand what these buildings were. The auditory was curved in plan, occupying rather more than a semicircle; the seats rose in tiers one behind another; a circular space was reserved for the chorus in the center of the seats and behind it was a raised stage, bounded by a wall forming its back and sides; a rough notion of the arrangement can be obtained from the lecture theater of many modern colleges, and our illustration (Fig. 37) gives a general idea of what must have been the appearance of one of these structures. Much of the detail of these buildings is, however, a matter of pure speculation and consequently does not enter into the scheme of this manual.

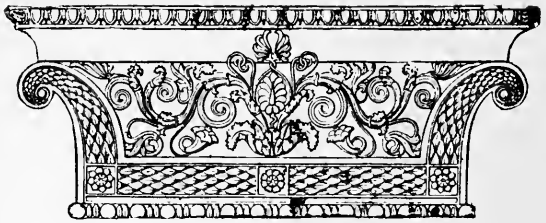


FIG. 38.—CAPITAL OF ANTÆ FROM MILETUS.

CHAPTER III.

GREEK ARCHITECTURE.

Analysis.

THE *plan*, or floor-disposition, of a Greek building was always simple however great its extent, was well judged for effect, and capable of being understood at once. The grandest results were obtained by simple means and all confusion, uncertainty, and complication were scrupulously avoided. Refined precision, order, symmetry, and exactness mark the plan as well as every part of the work.

The plan of a Greek temple may be said to present many of the same elements as that of an Egyptian temple, but, so to speak, turned inside out. Columns are relied on by the Greek artist, as they were by the Egyptian artist, as a means of giving effect; but they are placed by him outside the building instead of within its courts and halls. The Greek, starting with a comparatively small nucleus formed by the cell and the treasury, encircles them by a magnificent girdle of pillars and so makes a grand structure. The disposition of these columns and of the great range of steps, or stylobate, is the most marked feature in Greek temple plans. Columns also existed, it is true, in the interior of the building, but these were of smaller size and seem to have been introduced to aid in carrying the roof and the clerestory, if there was one. They have in several instances disappeared, and there is certainly no

ground for supposing that the attempt was made to reproduce in any Greek interior the grand but oppressive effect of a hypostyle hall. That was abandoned, together with the complication, seclusion, and gloom of the long series of chambers, cells, etc., placed one behind another, just as the contrasts and surprises of the series of courts and halls following in succession were abandoned for the one simple but grand mass built to be seen from without rather than from within. In the greater number of Greek buildings a degree of precision is exhibited, to which the Egyptians did not attain. All right angles are absolutely true; the setting-out (or spacing) of the different columns, piers, openings, etc., is perfectly exact; and, in the Parthenon, the patient investigations of Mr. Penrose and other skilled observers have disclosed a degree of accuracy as well as refinement which resembles the precision with which astronomical instruments are adjusted in Europe at the present day, rather than the rough and ready measurements of a modern mason or bricklayer.

What the plans of Greek palaces might have exhibited, did any remains exist, is merely matter for inference and conjecture and it is not proposed in this volume to pass far beyond ascertained and observed facts. There can be, however, little doubt that the palaces of the West Asiatic style must have at least contributed suggestions as to internal disposition of the later and more magnificent Greek mansions. The ordinary dwelling houses of citizens, as described by ancient writers, resembled those now visible in the disinterred cities of Pompeii and Herculaneum. The chief characteristic of the plan of these is that they retain the disposition which in the temples was discarded; that is to say, all the doors and windows look into an inner court, and the house is as far as possible secluded within an encircling wall. The contrast between the openness of the public life led by the men in Greek cities and the seclusion of the women and the families when at home, is remarkably illustrated by this difference between the public and private buildings.

The plan of the triple building called the Erechtheum (Fig. 29) deserves special mention as an example of an exceptional arrangement which appears to set the ordinary laws of symmetry at defiance and which is calculated to produce a

result into which the picturesque enters at least as much as the beautiful. Though the central temple is symmetrical, the two attached porticoes are not so and do not, in position, dimensions, or treatment, balance one another. The result is a charming group, and we cannot doubt that other examples of freedom of planning would have been found, had more remains of the architecture of the great cities of Greece come down to our own day.

In public buildings other than temples—such as the theater, the *agora*, and the basilica—the Greek architects seem to have had great scope for their genius; the planning of the theaters shows skillful and thoroughly complete provisions to meet the requirements of the case. A circular disposition was here introduced—not, it is true, for the first time, since it is rendered probable by the representations on sculptured slabs that some circular buildings existed in Assyria and circular buildings remain in the archaic works at Mycenæ; but it was now elaborated with remarkable completeness, beauty, and mastery over all the difficulties involved. Could we see the great theater of Athens as it was when perfect, we should probably find that as an interior it was almost unrivaled, alike for convenience and for beauty; and for these excellences it was mainly indebted to the elegance of its planning. The actual floor of many of the Greek temples appears to have been of marble of different colors.

The Walls.

The construction of the walls of the Greek temples rivaled that of the Egyptians in accuracy and beauty of workmanship and resembled them in the use of solid materials. The Greeks had within reach quarries of marble, the most beautiful material which nature has provided for the use of the builder; and great fineness of surface and high finish were attained. Some interesting examples of hollow walling occur in the construction of the Parthenon. The wall was not an element of the building on which the Greek architect seemed to dwell with pleasure; much of it is almost invariably overshadowed by the lines of columns which form the main features of the building.

The pediment, or gable, of a temple is a grand development

of the walls and perhaps the most striking of the additions which the Greeks made to the resources of the architect. It offers a fine field for sculpture and adds real and apparent height beyond anything that the Egyptians ever attempted since the days of the Pyramid builders; and it has remained in constant use to the present hour.

We do not hear of towers being attached to buildings and, although such monumental structures as the Mausoleum of Halicarnassus approached the proportions of a tower, height does not seem to have commended itself to the mind of the Greek architect as necessary to the buildings which he designed. It was reserved for Roman and Christian art to introduce this element of architectural effect in all its power. On the other hand, the Greek, like the Persian architect, emphasized the base of his building in a remarkable manner, not only by base moldings, but by planting the whole structure on a great range of steps which formed an essential part of the composition.

The Roof.

The construction of the roofs of Greek temples has been the subject of much debate. It is almost certain that they were in some way so made as to admit light. They were framed of timber and covered by tiles, often, if not always, of marble. Although all traces of the timber framing have disappeared, we can at least know that the pitch was not steep by the slope of the outline of the pediments, which formed, as has already been said, perhaps the chief glory of a Greek temple. The flat stone roofs sometimes used by the Egyptians and necessitating the placing of columns or other supports close together, seem to have become disused, with the exception that where a temple was surrounded by a range of columns the space between the main wall and the columns was so covered.

The vaulted stone roofs of the archaic buildings, of which the treasury of Atreus (Figs. 5, 6) was the type, do not seem to have prevailed in a later period or, so far as we know, to have been succeeded by any similar covering or vault of a more scientific construction.

It is hardly necessary to add that the Greek theaters were not roofed. The Romans shaded the spectators in their

theaters and amphitheaters by means of a *velarium*, or awning, but it is extremely doubtful whether even this expedient was in use in Greek theaters.

The Openings.

The most important characteristic of the openings in Greek buildings is that they were flat-topped,—covered by a lintel of stone or marble,—and never arched. Doors and window openings were often a little narrower at the top than the bottom and were marked by a band of moldings, known as the architrave, on the face of the wall, and, so to speak, framing in the opening. There was often also a small cornice over each (Figs. 39, 40). Openings were seldom advanced into prominence or employed as features in the exterior of a building; in fact, the same effects which windows produce in other styles were in Greek buildings created by the interspaces between the columns.

The Columns.

These features, together with the superstructure or entablature, which they customarily carried, were the prominent parts of Greek architecture, occupying as they did the entire height of the building. The development of the orders (which we have explained to be really decorative systems, each of which involved the use of one sort of column, though the term is constantly understood as meaning merely the column and entablature) is a very interesting subject and illustrates the acuteness with which the Greeks selected from those models which were accessible to them, exactly what was suited to their purpose and the skill with which they altered and refined and almost redesigned everything which they so selected.

During the whole period when Greek art was being developed, the ancient and polished civilization of Egypt constituted a most powerful and most stable influence, always present, always, comparatively speaking, within reach, and always the same. Of all the forms of column and capital existing in Egypt, the Greeks, however, only selected that straight-sided, fluted type of which the Beni-Hassan example is the best known, but by no means the only instance. We first meet with these fluted columns at Corinth, of very sturdy pro-

portions and having a wide, swelling, clumsy molding under the *abacus* by way of a capital. By degrees the proportions of the shaft grew more slender and the profile of the capital more elegant and less bold, till the perfected proportions of the Greek Doric column were attained. This column is the original to which all columns with molded capitals that have been used in architecture, from the age of Pericles to our own, may be directly or indirectly referred; while the Egyptian types which the Greeks did not select—such, for example, as the lotus-columns at Karnak—have never been perpetuated.

A different temper or taste, and partly a different history, led to the selection of the West Asiatic types of column by a

FIG. 39.—GREEK DOORWAY, SHOWING CORNICE.

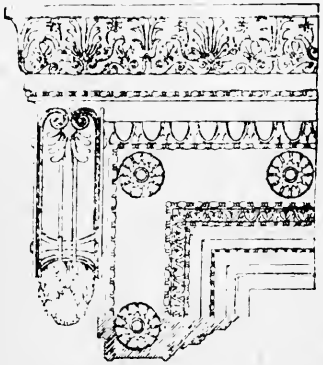


FIG. 40.—GREEK DOORWAY, FRONT VIEW. (FROM THE ERECHTHEUM.)

section of the Greek people; but great alterations in proportion, in the treatment of the capital, and in the management of the molded base from which the columns sprang, were made, even in the orders which occur in the Ionic buildings of Asia Minor. This was carried further when the Ionic order was made use of in Athens herself, and as a result the Attic base and the perfected Ionic capital are to be found at their best in the Erechtheum example. The Ionic order and the Corinthian, which soon followed it, are the parents,—not, it is true, of all, but of the greater part of the columns with foliated capitals that have been used in all styles and periods of archi-

tecture since. It will not be forgotten that rude types of both orders are found represented on Assyrian bas-reliefs, but still the Corinthian capital and order must be considered as the natural and, so to speak, inevitable development of the Ionic. From the Corinthian capital an unbroken series of foliated capitals can be traced down to our own day; almost the only new ornamented type ever devised since being that which takes its origin in the Romanesque block capital, known to us in England as the early Norman cushion capital; this was certainly the parent of a distinct series, though even these owe not a little to Greek originals.

We have alluded to the Ionic base. It was derived from a very tall one in use at Persepolis and we meet with it first in the rich but clumsy forms of the bases in the Asia Minor examples. In them we find the height of the feature as used in Persia compressed, while great, and to our eyes eccentric, elaboration marked the moldings; these the refinement of Attic taste afterwards simplified, till the profile of the well-known Attic base was produced—a base which has had as wide and lasting an influence as either of the original forms of capital.

The Corinthian order, as has been above remarked, is the natural sequel of the Ionic. Had Greek architecture continued till it fell into decadence, this order would have been the badge of it. As it was, the decadence of Greek art was Roman art, and the Corinthian order was the favorite order of the Romans; in fact all the important examples of it which remain are Roman work.

If we remember how invariably use was made of one or other of the two great types of the Greek order in all the buildings of the best Greek time, with the addition toward its close of the Corinthian order, and that these orders, a little more subdivided and a good deal modified, have formed the substratum of Roman architecture and of that in use during the last three centuries; and if we also bear in mind that nearly all the columnar architecture of Early Christian, Byzantine, Saracenic, and Gothic times, owes its forms to the same great source, we may well admit that the invention and perfecting of the orders of Greek architecture has been—with one exception—the most important event in the archi-

tectural history of the world. That exception is, of course, the introduction of the Arch.

The Ornaments.

Greek ornaments have exerted the same wide influence over the whole course of Western art as Greek columns; and in their origin they are equally interesting as specimens of Greek skill in adapting existing types and of Greek invention where no existing types would serve.

Few of the moldings of Greek architecture are to be traced to anterior styles. There is nothing like them in Egyptian work and little or nothing in Assyrian; and though a suggestion of some of them may no doubt be found in Persian examples, we must take them as having been substantially originated by Greek genius, which felt that they were wanted, designed them, and brought them far toward absolute perfection. They were of the most refined form and when enriched were carved with consummate skill. They were executed, it must be remembered, in white marble—a material having the finest surface and capable of responding to the most delicate variations in contour by corresponding changes in shade or light in a manner and to a degree which no other material can equal. In the Doric, moldings were few and almost always convex; they became much more numerous in the later styles and then included many of concave profile. The chief are the *ovolo*, which formed the curved part of the Doric capital and the crowning molding of the Doric cornice; the *cyma;* the *bird's beak*, employed in the capitals of the *antæ*; the *fillets* under the Doric capital; the hollows and *torus* moldings of the Ionic and Corinthian bases.

The profiles of these moldings were very rarely segments of circles, but lines of varying curvature, capable of producing the most delicate changes of light and shade and contours of the most subtle grace. Many of them correspond to conic sections, but it seems probable that the outlines were drawn by hand and not obtained by any mechanical or mathematical method.

The moldings were some of them enriched, to use the technical word, by having such ornaments cut into them or carved on them as, though simple in form, lent themselves

well to repetition. Where more room for ornament existed, and especially in the capitals of the Ionic and Corinthian orders, ornaments were freely and most gracefully carved and very symmetrically arranged. Though these were very various, yet most of them can be classed under three heads. (1.) FRETS (Figs. 73 to 77). These were patterns made up of squares or L-shaped lines interlaced and made to seem intricate, though originally simple. Frequently these patterns are called Doric frets from their having been most used in buildings of the Doric order. (2.) HONEYSUCKLE (Figs. 51 and 68 to 71). This ornament, admirably conventionalized, had been used freely by the Assyrians, and the Greeks only adopted what they found ready to their hand when they began to use it; but they refined it at the same time losing no whit of its vigor or effectiveness, and the honeysuckle has come to be known as a typical Greek decorative *motif*. (3.) ACANTHUS (Figs. 41, 42). This is a broad-leaved plant, the foliage and stems of which, treated in a conventional manner, though with but little departure from nature, were found admirably adapted for floral decorative work and accordingly were made use of in the foliage of the Corinthian capital and in such

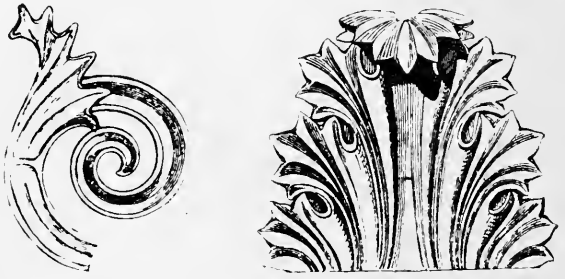


FIG. 41.—THE ACANTHUS LEAF AND STALK.

ornaments as, for example, the great finial which forms the summit of the Choragic Monument of Lysicrates (Fig. 35).

The beauty of the carving was, however, eclipsed by that highest of all ornaments—sculpture. In the Doric temples, as, for example, in the Parthenon, the architect contented

himself with providing suitable spaces for the sculptor to occupy; and thus the great pediments, the metopes (Fig. 43), or square panels, and the frieze of the Parthenon were occupied by sculpture, in which there was no necessity for more conventionalism than the amount of artificial arrangement needed in order fitly to occupy spaces that were respectively triangular, square, or continuous. In the later and more voluptuous style of the Ionic temples we find sculpture made into an architectural feature, as in the famous statues, known as the caryatids (page 35), which support the smallest portico of the Erechtheum, and in the enriched columns of the Temple of Diana at Ephesus. Sculpture had already been so employed in Egypt and was often so used in later times; but the best opportunity for the display of the finest qualities of the sculptor's art is such a one as the pediments, etc., of the great Doric temples afforded.

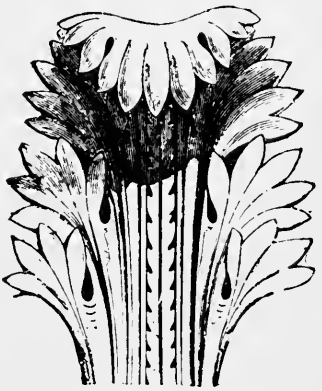


FIG. 42.—THE ACANTHUS LEAF

There is little room for doubting that all the Greek temples were richly decorated in colors, but traces and indications are all that remain; these, however, are sufficient to prove that a very large amount of color was employed and that probably ornaments (Figs. 62 to 77) were painted upon many of those surfaces which were left plain by the mason, especially on the cornices, and that mosaics (Fig. 44) and colored marbles and even gilding were freely used. There is also ground for believing that as the use of carved enrichments increased with the increasing adoption of the Ionic and Corinthian styles, less use was made of painted decorations.

Architectural Character.

Observations which have been made during the course of this and the previous chapters will have gone far to point out

the characteristics of Greek art. An archaic and almost forbidding severity, with heavy proportions and more strength than grace, marks the earliest Greek buildings of which we have any fragments remaining. Dignity, sobriety, refinement, and beauty are the qualities of the works of the best period. The latest buildings were more rich, more ornate, and more slender in their proportions, and to a certain extent less severe.

Most carefully studied proportions prevailed and were

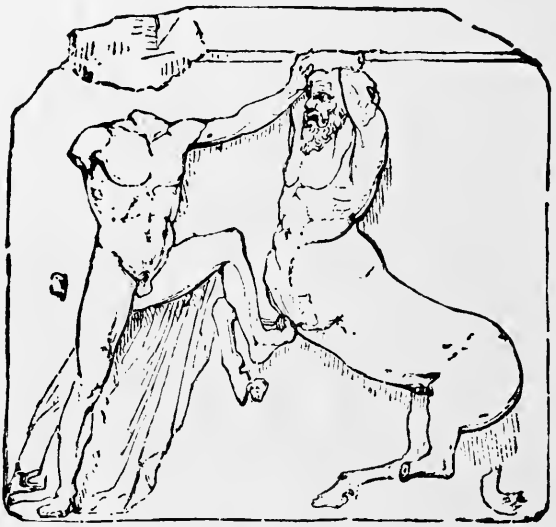


FIG. 43.—METOPE FROM THE PARTHENON. CONFLICT BETWEEN A CENTAUR AND ONE OF THE LAPITHÆ.

wrought out to a pitch of completeness and refinement which is truly astounding. Symmetry was the all but invariable law of composition. Yet in certain respects—as, for example, the spacing and position of the columns—a degree of freedom was enjoyed which Roman architecture did not possess. Repetition ruled to the almost entire suppression of variety. Disclosure of the arrangement and construction of the building was almost complete and hardly a trace of concealment can be detected. Simplicity reigns in the earliest examples, the

elaboration of even the most ornamental is very chaste and graceful, and the whole effect of Greek architecture is one of harmony, unity, and refined power.

A general principle seldom pointed out which governs the application of enrichments to moldings in Greek architecture may be cited as a good instance of the subtle yet admirable concord which existed between the different features; it is as

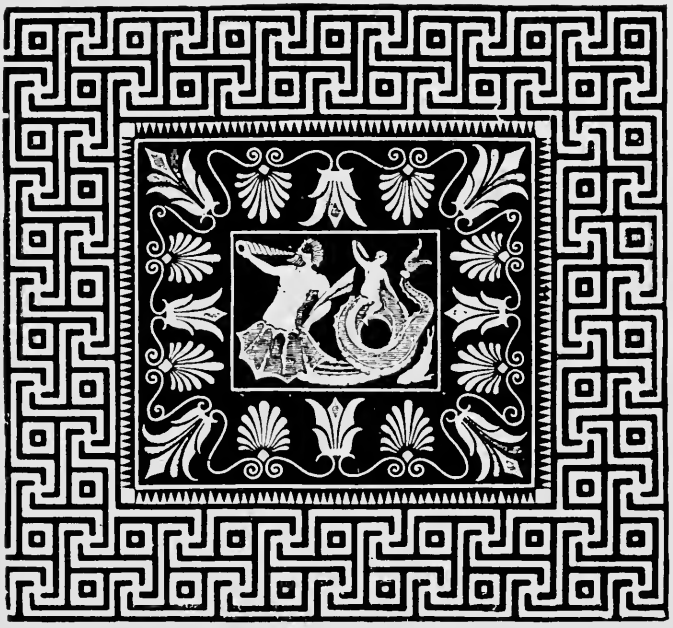


FIG. 44.—MOSAIC FROM THE TEMPLE OF ZEUS, OLYMPIA.

follows: *The outline of each enrichment in relief was ordinarily described by the same line as the profile of the molding to which it was applied.* The egg enrichment (Fig. 47) on the ovolo, the water-leaf on the *cyma reversa* (Figs. 48, 54), the honeysuckle on the *cyma recta* (Fig. 51), and the *guilloche* (Fig. 57) on the *torus*, are examples of the application of this rule—one which obviously tends to produce harmony.

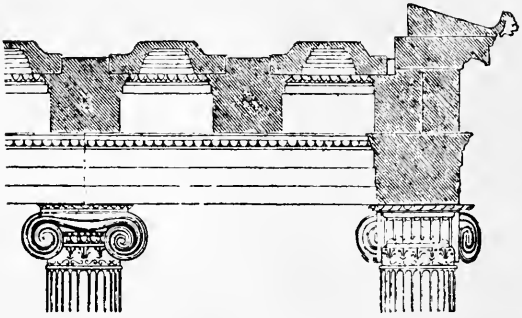


FIG. 45.—SECTION OF THE PORTICO OF THE ERECHTHEUM.

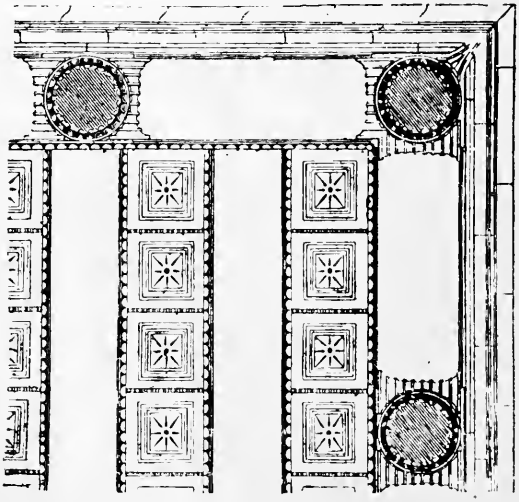


FIG. 46.—PLAN OF THE PORTICO—LOOKING UP.

EXAMPLES OF GREEK ORNAMENT

IN THE NORTHERN PORTICO OF THE ERECHTHEUM—SHOWING THE ORNAMENTATION OF THE CEILING.

FIG. 47.—EGG AND DART.

FIG. 48.—LEAF AND DART.

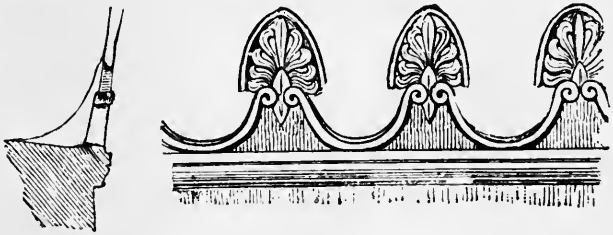


FIG. 49.—HONEYSUCKLE.

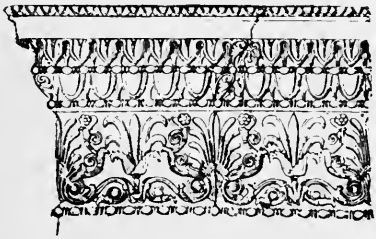


FIG. 50.—CAPITAL OF ANTÆ FROM THE ERECHTHEUM.

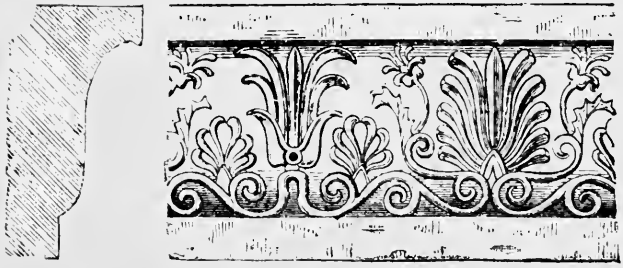


FIG. 51.—HONEYSUCKLE.

EXAMPLES OF GREEK ORNAMENT IN RELIEF.

FIG. 52.—ACANTHUS.

FIG. 53.—ACANTHUS.

FIG. 54.—LEAF AND TONGUE.

FIG. 55.—LEAF AND TONGUE.

FIG. 58.—BEAD AND FILLET.

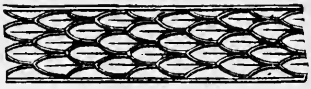


FIG. 56.—GARLAND.

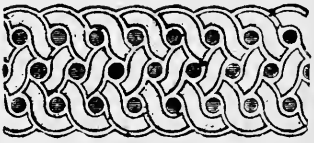


FIG. 57.—GUILLOCHE.

FIG. 59.—BEAD AND FILLET.

FIG. 60.—TORUS MOLDING.

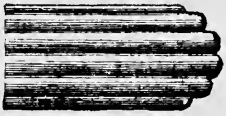


FIG. 61.—TORUS MOLDING.

EXAMPLES OF GREEK ORNAMENT IN RELIEF.

FIG. 62.—HONEYSUCKLE.

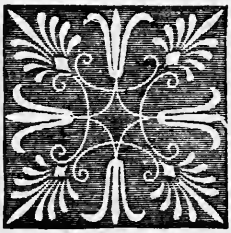


FIG. 64.—HONEYSUCKLE.

FIG. 63. FIG. 65.

FIGS. 63, 65.—FACIAS WITH BANDS OF FOLIAGE.

FIG. 73.

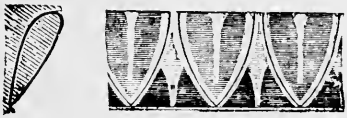


FIG. 66.—LEAF AND DART.

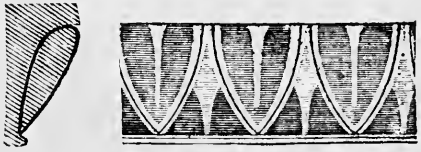


FIG. 67.—EGG AND DART.

FIG. 74.

EXAMPLES OF GREEK ORNAMENT IN COLOR.

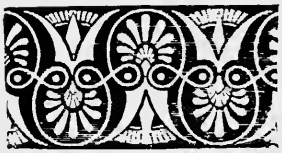


FIG. 68.

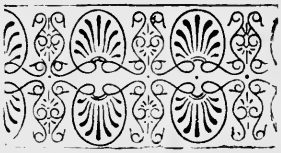


FIG. 69.

FIG. 70.

FIG. 71.

FIG. 72.—GUILLOCHE.

FIGS. 68 TO 70.—EXAMPLES OF THE HONEYSUCKLE.

FIG. 71.—COMBINATION OF THE FRET, THE EGG AND DART, THE BEAD AND FILLET, AND THE HONEYSUCKLE.

FIG. 75.

FIG. 76.

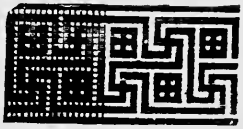
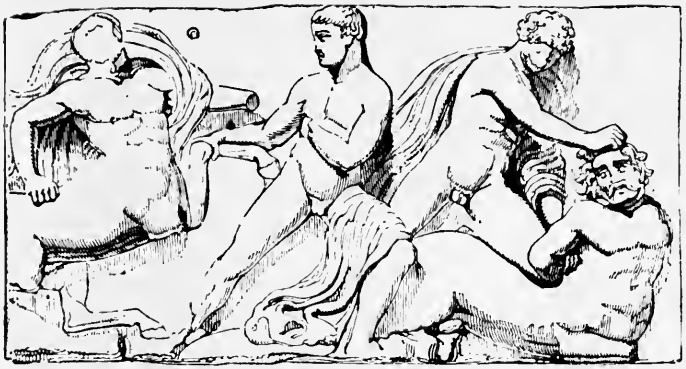


FIG. 77.

FIGS. 73 TO 77.—EXAMPLES OF THE FRET.

EXAMPLES OF GREEK ORNAMENT IN COLOR.



BAS-RELIEF IN MARBLE FROM THE TEMPLE OF APOLLO AT PHIGALIA.
CONTEST OF CENTAURS AND LAPITHÆ.
In the British Museum.

CHAPTER IV.

SCULPTURE IN GENERAL.

THE word "sculpture," derived from the Latin *sculpo*, I carve, is applicable to all work cut out in a solid material in imitation of natural objects. Thus carvings in wood, ivory, stone, marble, metal, and those works formed in a softer material, not requiring carving, such as wax and clay, all come under the general denomination of sculpture.

But sculpture, as we are about to consider it, is to be distinguished by the term "statuary," from all carved work belonging to ornamental art, and from those beautiful incised gems and cameos which form the class of glyptics, a word derived from the Greek *glypho*, I carve. It must be borne in mind, however, that the sculptor does not generally carve his work directly out of the marble; he first makes his statue or bas-relief in clay or sometimes in wax. It is scarcely necessary to say that the most primitive sculptor naturally took clay for his work, as the potter did for his "wheel." This method enabled him to "sketch in the clay" and to perfect his work in this obedient material. Michelangelo and such great masters could dispense with this and when they chose could carve at once

the statue from the block. The ancient Egyptian sculptors, and after them the Assyrians, carved their gigantic figures from the living rock. The rock-cut temples of India show similar work.

Carving is, however, of secondary consideration—with the exception of the special work of great masters just referred to—and it is the modeling in the clay which is the primary work. Sculpture is therefore properly styled "plastic art," from *plasso*, I fashion or mold. The "model," as it is termed technically, is afterwards to be "molded" by the exact application of liquid plaster of Paris in a proper manner. By means of the mold thus formed, a cast of the original clay statue or bas-relief is taken by a similar use of the liquid plaster. This liquid plaster has the property of solidifying, or "setting," as it is technically called, by a kind of crystallization, and it thus takes any form to which it is applied. The clay model, therefore, is like the original drawing of a painter, a master work. It is something more; it is the result of a previous step, for the sculptor has probably made a drawing before taking the clay in hand. The sculptor, therefore, is less a carver than a designer, draughtsman, and modeler. This being so, he invented a method of mechanical measurement by which most of the carving could be done by skilled labor. That this was an ancient practice is shown by an example in the Museum of St. John Lateran at Rome of an unfinished statue of a captive, which has been left with the "points" on the surface; so placed by the master as a guide for the workman.

In the process of "pointing," the model and the block of marble are each fixed on a base called a scale-stone, to which a standard vertical rod can be attached at corresponding centers, having at its upper end a sliding needle so adapted by a movable joint as to be set at any angle and fastened by a screw when so set. The master sculptor having marked the governing points with a pencil on the model, the instrument is applied to these and the measure taken. The standard being then transferred to the block-base, the "pointer," guided by this measure, cuts away the marble, taking care to leave it rather larger than the model, so that the general proportions are kept, and the more important work is then left for the master hand.

Hard Stones. Greek and Roman sculptors made many statues and bas-reliefs in hard stones. There are fine examples in the Vatican collection, but, as might be expected from the nature of the material, none that equal in beauty of form and expression the works in marble and bronze. The Vatican also contains the most remarkable collection of sculpture of this kind in existence, in the groups of animals, all in the most spirited actions of sport or combat, placed in what is called "the Hall of the Animals." The extremely difficult nature of such work may be understood when it is seen that the ordinary method of the chisel and mallet in the most skillful hands would be quite unavailing in this hard material and upon so small a scale. The treadle-wheel, the drill, and the file are brought to aid the chisel, and even these require the use of emery upon the wheel of the lapidary, in the method by which the hardest gems are cut.

Terra Cotta. Clay, modeled and dried in the sun or hardened by the fire, was naturally one of the early forms in which sculpture was developed. At once ready to hand and easily modeled, it was adopted for the same reasons that made clay convenient for the ordinary vessels of everyday use. So we find countless numbers of ancient figures of deities, animals, grotesque monsters, in baked or simply sun-dried clay, all more or less barbaric and archaic in style, whether found in Mexico or Cyprus, in Egypt or Assyria, in Etruria or the Troad. These have escaped destruction chiefly on account of their not being of any value, as bronze and marble were, and partly from their great durability in resisting decay.

Terra cotta was obviously chosen by the sculptors of Greece and Rome, as it is by modern artists, with the view of preserving the exact spirit and freedom of the original, whether as a sketch or as a finished work. Although some shrinking under the action of the fire has to be allowed for, and occasionally an accidental deformity may occur from this cause, yet what is well-baked is certain to possess the excellence of the work in the fresh clay, as it escapes the chances of overfinish and the loss of truth and animation, which too often befall bronze and marble. As it left the hand of the master the fire fixed it, converting the soft clay into a material as hard as marble and more capable of resisting damp and heat.

Ivory. Another ancient form of sculpture to be noticed, though no examples of it remain, is very important as it is known to have been that employed by the greatest master of the art—Phidias, for his grand colossal statues of Zeus and Athene in the temples of those gods. This is called *Chryselephantine*, on account of the combined use of gold (*chrysos*) and ivory (*elephas*), the nude parts of the figure being of ivory, with color applied to the flesh and features, and the drapery of gold. The statue was substantially but roughly made in marble with wood perhaps upon it; the ivory being laid on in

FIGS. 78, 79, 80.—SHOWING THE SUPPOSED METHOD OF WORKING IVORY IN PIECES LAID ON.

thick pieces (Figs. 78, 79, 80). Much interesting research has been given to this form of sculpture, by De Quincy especially, but it is not necessary to enter into details which are so largely conjectural.

Wood. Statues of wood of various kinds were made by the most ancient sculptors of Egypt, Assyria, and Greece.

The Greeks called their wood statues *zoana*, from *zeo*, I polish or carve. The statue of a god was called *agalma kion*, (an image column)—a column is taken to mean also a statue (Plutarch). Castor and Pollux were represented by the Lacedæmonians simply as two pieces of wood joined by a ring, hence the sign II for the twins in the Zodiac. The small figures of men and animals, called by the Greeks *Dædalides* as supposed to be made by Dædalus (a name derived from *daidallo*, I work skillfully) and his school of artificers, were carved in wood.

Bronze. This was one of the most important forms of ancient statuary. Unfortunately we have to rely almost entirely upon ancient writers for any descriptions of the great works of the Greek sculptors in bronze and upon those copies of them in marble which tradition tells us are such. The original bronze works have long since perished, some by fire and others by the hand of the spoiler.

The ancient bronze workers sought to obtain effects of color. Pliny states that Aristonidas made a statue of "Athamas" that showed the blush of shame in the face, by the rusting of the iron mixed with the bronze. Plutarch mentions a "Jocasta dying," the face of which was pale, the sculptor Silanion having mixed silver with the bronze. A representation of the "Battle of Alexander and Porus" was like a picture, from the different colors of the metal employed. Possibly these effects were obtained by inlaying with metals of different colors.

The primitive bronze workers began by hammering solid metal into shapes, before they arrived at the knowledge of casting. The "toreutic" art, although not definitely known at present, was probably that of hammering, punching, and chiseling plates of metal, either separately or with a view to fixing them upon stone or wood. Much ancient work was of this kind, as the famous shield of Achilles, described by Homer; the chest of Cypselus, made about 700 B. C.; and the ornamental work of the temple of Jerusalem. The Greek word for hammer, *sphyra*, gave the name of *sphyrelaton* to work of this kind.

The casting of metal in molds of a very simple kind for small ornaments like rings, the pendants of necklaces, buttons, and bosses, must have followed upon the discovery that metals could be melted in the fire. There are many allusions to this in the Bible (Job xxviii. 1, 2), and to the refiner and purifier of "gold seven times purified."

As the sculptor improved in his art of modeling he would be able to make better molds. He would soon observe that his solid statue was not only a costly work but a very heavy one. He would find that solid arms broke off at the trunk from mere weight or that his whole figure had collapsed from the same simple cause. Thus he would be led to seek some means

of overcoming these defects in his cast statues, which, though an improvement upon his hammered ones in their correctness of form, were not so durable. This was accomplished by the discovery of a contrivance for casting metal in a hollow form. It was done very much as it is at the present day.

The Various Forms Adopted in Sculpture.

Having described the various materials and methods employed in sculptural art, we are in a condition to classify the different forms adopted, and arrange them under the proper terms.

All sculpture is measurable; and it has three dimensions—height, width, and depth. Sculpture in "the round," *i. e.* statuary proper, has also circumference, or girth, that may be measured.

Sculpture in Relief.

Bas-relief, or *basso-relievo*, is the term used when the work projects from the general plain surface, or ground, the

FIG. 81.—ALTO-RELIEVO. ONE OF THE METOPES OF THE PARTHENON.

forms being rounded as in nature. If the work is very little raised, the forms being not so projecting as in nature, it is called *flat-relief* or *stiacciato*.

If more raised, but not free from the ground in any part, it is described as *half-relief*, or *mezzo-relievo*, as in the Parthenon and other friezes.

If the relief is still higher it becomes *full-relief*, or *alto-relievo*, in which parts of the figures are entirely free from the ground of the slab; as in the metopes of the Parthenon (Fig. 81).

Sunk-relief, or *cavo-relievo*—in which the work is recessed within an outline but still raised in flat relief not projecting above the surface of the slab as seen in the ancient Egyptian carvings.

The beauty and character of bas-relief depend much upon the representation of outline. The projection is small in proportion to the distinctness and continuity of line enforced by this method, so conspicuously seen, in its most masterly style, in the frieze of the Parthenon.

Statuary.

Statuary proper, which is so called from the Latin *stare*, to stand, is sculpture in the round. A statue is therefore seen on every side. Statues are—1. Standing. 2. Seated. 3. Recumbent. 4. Equestrian. They are classed into five forms as to size:

1. *Colossal*—above the heroic standard.
2. *Heroic*—above six feet, but under the colossal.
3. *Life Size.*
4. *Small Life Size.*
5. *Statuettes*—half the size of life, and smaller.

The ancient sculptors represented with great beauty the various mythological creatures described in their fables; some of which are of the human form varied—as the Amazon, the Faun, the Syren, the Nereid, the Cyclops, the Janus, or *bifrons* (double-faced), and the Hermaphrodite, uniting the characteristics of Hermes and Aphrodite. In other instances they invented the combinations of the human with the brute form of fabulous creatures described in ancient mythology. These are: (*a*) *Sphinx*—lion with head of man or woman;

(*b*) man with eagle or hawk head; (*e*) *Minotaur*—man with head or body of the bull; (*d*) *Centaur*—man with part of trunk and limbs of the horse; (*c*) *Satyr*—man with hind quarters of a goat; (*f*) *Triton*—man with fish-tail; (*g*) *The Giants*—men with serpents for legs; (*h*) *Harpy*—woman and bird. Other strange creatures were of brutes only, as the *Hippocamp*—horse and fish, with fins at the hoofs; the *Chimœra*, *Griffin*, *Dragon*, *Dog Cerberus*, with many heads, etc.

Different Marbles Used by Greek Sculptors.

Many varieties of fine marbles were plentiful in Greece and Asia Minor; they take names from the mountains where they were quarried.

Soft Marbles—sedimentary rocks of limestone.

Pentelic marble, from Mount Pentelicus in the neighborhood of Athens, is found white, with a fine fracture, brilliant and sparkling, obtaining with exposure, after having received the surface polish from the hand of the sculptor, a beautiful warm tone comparable to ivory. This effect is seen in the Parthenon and other temples in Athens built of this marble, which have an extraordinary richness in their golden tint, especially under bright sunlight and seen against a blue sky. The yellow color is said to be caused by oxidation of some salt of iron contained in the marble. The statues in Athens and many others now in various museums are also of the same marble.

Parian is the marble from the island of Paros. The marble usually called Parian has a coarse, sparkling grain, which, however, takes a high finish; but there is reason to suppose that the true Parian marble was of extremely fine grain, easy to work, and of a creamy white.

Phigalian—a gray marble, seen in the bas-reliefs from Phigalia.

Æginetan—a grayish marble, seen in the statues of the pediment of the Temple of Athene, now in the museum of Munich.

Black marble—found at Cape Tenaros.

Verde antico—found at Taygetos.

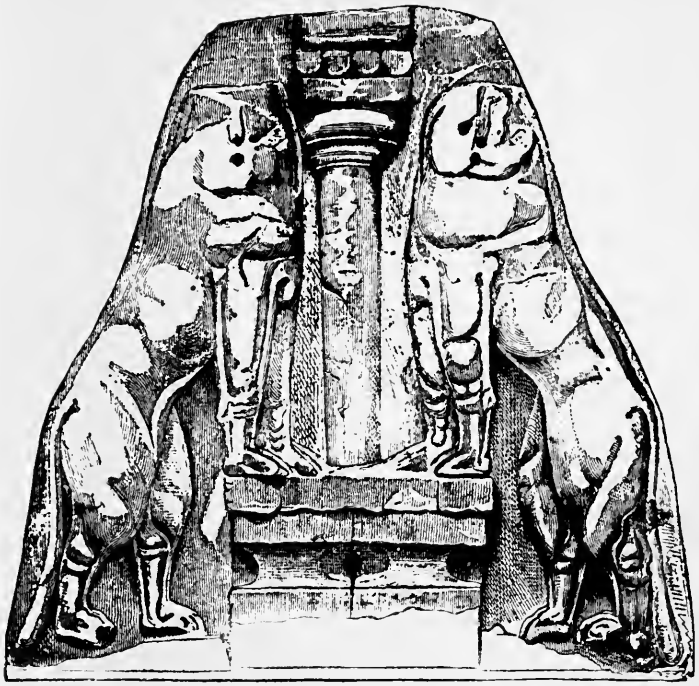


FIG. 82.—THE GATE OF LIONS AT MYCENÆ.
10 feet high and 15 feet wide; of greenish limestone.

CHAPTER V.

ARCHAIC GREEK SCULPTURE.

THE origin of the arts of Greece has been generally ascribed by her own early records and traditions to Egyptian influences. The evidence derived from the style of art followed at this early period tends to confirm tradition. The earliest coins of Greek work with the head of Athene show a striking resemblance to the heads of Isis.

There are many examples of vases, painted with figures representing in the most primitive forms the oldest mytholog-

ical heroes and deities, which closely resemble the Egyptian *cavi relievi* and paintings; they are in profile with the eye full and the feet turned both in the same direction or, when the figure is full-face as in some bas-reliefs, the feet are in the impossible position of profile and both on the same plane. In painting, the absence of all attempt to represent shadow, either in the forms or in the cast shadow, and the use of a strong black outline, sometimes incised and having the color filled in as a flat tint, are other points of affinity between the early Greek work and the Egyptian.

But it is important to bear in mind, in a historical consideration of the question, that it was in Ionia that the arts were promoted long before Athens had begun to show any advance; and all the names, handed down by the traditions taken up by Diodorus Siculus, Pausanias, Pliny, and the late Greek writers, are those of sculptors working in the islands near the Asiatic shore and in the towns upon the mainland. Thus in the

FIG. 83.—EARLY COIN OF ATHENS, HEAD OF ATHENE; THE EYE FULL, AS IN EGYPTIAN RELIEFS.

FIG. 84.—COIN OF ATHENS AFTER THE TIME OF PHIDIAS. WITH THE HELMET INTRODUCED BY PHIDIAS.

objects found by Cesnola in Cyprus, consisting of statues and other sculptures, incised gems, and metal work of the hammered-out or *repoussé* kind, the resemblance to the art of Assyria is remarkable.

But besides the workmanship there is more decisive evidence in the choice and treatment of the subjects; these tend to confirm the same view.

The bas-reliefs upon the Harpy tomb (Fig. 85), as it is called, which was discovered in 1838 by Sir C. Fellows, were at first supposed by Gibson the great sculptor and student of classic

FIG. 85.—BAS-RELIEF ON THE HARPY TOMB. THE FIGURES IN PROFILE, AND WITH THE PRIMITIVE DRAPERIES.

In the British Museum.

sculpture, to have for their subject the Harpies flying away with the daughters of King Pandarus, as related by Homer ("Odys." lib. xx.). Pandarus was king of Lycia. But archæologists are not agreed upon the point; more recent opinions conjecture that the subject is simply funereal, and the Harpies emblematic of untimely death are bearing off the souls of mortals. The Harpy figures are more especially Assyrian in the character of the work. The date of these Lycian sculptures is not later than 500 B. C. In the other reliefs which are now on the walls of the New Lycian room, in the British Museum, there are sieges, chariots, processions, and many figures in the energetic action so remarkable in the Nineveh sculptures. The two lions sculptured in the round resemble the Assyrian lions in style. All this is told in the same graphic manner as on the Nineveh slabs, and it is most interesting to compare these two series of sculptures in the British Museum. It will be observed that most of the figures are in profile and that the eyes are nevertheless shown in full; the same peculiar smile prevails in all, which is a distinguishing feature in Etruscan works and in the Æginetan and other

sculptures we shall have to notice. This is also seen in the coins of the time and is a feature which has, of course, some similarity to the Egyptian, but not less to the Assyrian style. The long, straight folds and zigzag edges of the draperies are also archaic forms which belong to these Lycian sculptures, as well as the sculptures found at Selinus in Sicily; and to a draped figure found on the Acropolis at Athens in the ruins of temples and buildings which were erected there before the Parthenon. These were destroyed by the Persians in the early battles of the Athenians against their old enemy. Their date

FIG. 86.—BAS-RELIEFS ON THE HARPY TOMB.
In the British Museum.

is considered to be about 560—490 B. C., when Pisistratus was ruler at Athens and later.

The archaic "Artemis" of the Naples Museum in marble (Fig. 87) shows the zigzag form of drapery, which is also seen on a similar figure in the Dresden collection. It has been said these archaic statues are Egyptian in style, yet it is difficult to see this character in them beyond the general rigidity and the calm smiling look of the features. But in this respect they are equally like the Assyrian, and for the simple reason that to give any expression to the countenance requires a higher exercise of art and this these sculptors were not sufficiently skilled to do. The Egyptians could perhaps have done it, but

FIG. 87.—ARTEMIS, FOUND AT POMPEII.

Showing the archaic style of drapery folds.

In the Naples Museum.

it was not in keeping with their intention and the genius of their art. The Assyrians were very rough expressionists, rather vulgar and puerile in their imitative sculpture, but, as we have observed, inventive, and with more feeling for design than the Egyptians in their ornament. Seeking for other signs of Egyptian teaching in early Greek sculpture, it is remarkable that not a single example can be pointed out of *cavo-relievo* (page 65), such as the Egyptians adopted so universally. Though effective, durable beyond all other forms, and capable of carrying color, yet it never was employed by Greek carvers or architects early or late; nor, as has been pointed out, was the *cavo-relievo* ever employed in the Assyrian reliefs.

Turning next to the statues—the seated and standing figures carved universally with some supporting part of the work at the back and not in the round—the examples of similar statues in Greece are extremely rare. There are as yet only the headless seated Athene in the Museum at Athens, and ten draped, seated statues found in 1858, by Mr. Newton, at Miletus on the Asiatic shore of the Ægean, all headless but one.

It may be observed that among the small objects found in Greece there are none of those miniature figures of deities precisely like the large Egyptian statues which abound in Egypt. To these some importance must have been attached, since they are found in every mummy case, often rolled up with the cerecloths, and probably intended as amulets or protecting charms.

From all that we learn of the Egyptians, through such exhaustive researches as those of Sir G. Wilkinson, it would seem that the sculptors and the carvers of hieroglyphics were a distinct class or caste, descending from father to son, and always under the close control of the priestly rule. It is not likely that they would ever become colonists and travel away from their city. Those who did wander off with Cecrops and Cadmus were not any of them sculptors or we should have found some trace of their work. The Egyptians were a religious, not a commercial, people, and not colonizers. They devoted themselves to a life of ease and luxurious repose; they were dreamers over the abstract and only entered into wars to defend themselves and their territory.

The Phœnicians are sometimes spoken of as teachers; but

FIG. 88.—COLOSSAL, 34 INCHES HIGH.

FIG. 89.—STONE, $9\frac{1}{2}$ INCHES HIGH.

FIG. 90.—STONE, 12 INCHES HIGH.

FIG. 91.—STONE, 11 INCHES HIGH.

HEADS FOUND BY CESNOLA IN THE TEMPLE OF GOLGOI, CYPRUS.

they never developed any art in the direction either of beauty of form or energy of expression. As the earliest and most expert metal workers, they taught their neighbors and carried the materials both along the coast and to the islands of the Ægean. In Cyprus abundant examples have been found in the discoveries of General Cesnola of Phœnician and Græco-Phœnician work.

Let us endeavor to trace in other monuments that remain, the influence of Egyptian and Assyrian art, as shown in the work of the Pelasgi and Etrusci. Those which are simply barbaric, as we have already pointed out, have no value for sculptural art in helping us to identify any foreign influence, since they belong to no individual style. Neither is much to be learned from sepulchral structures such as the *tumuli* common to the plains of Troy and the far west of Europe, as well as the far east of India; nor from the underground structures known as treasuries. Sculptural art did not take its great spring in advance from any of these, as no statues of any value in art have ever been found in them.

At Mycenæ, once, perhaps in the days of Homer (850—800? B. C.), the most important city of Greece, there are sculptural works in the remains of two lions over the entrance gate (Fig. 82), which are examples of Pelasgic art. The height of these is about 10 feet and the width 15 feet. The stone is a greenish limestone. The holes show where the metal pins held the heads, long since decayed. Fragments as they are, they show an Assyrian rather than an Egyptian influence in the strong marking of the muscles and joints, softened though it is by decay, and in the erect attitude, which denotes action such as is not seen in Egyptian art of this kind. Whether it is a column they support or an altar is doubtful; but the four round projections above the capital resemble the wood structure of the Lycian tombs. The peculiar tail of the lions, with the knob at the tip, is exactly such as we see in the Assyrian lions. These lions should be compared also with the wounded lion in the British Museum, Nineveh collection (Fig. 94). Of this "gate of the lions," which has long been known as a most ancient work of early Greek sculpture, it must be noticed that it is not in the round but only in high relief. And this is the case with all the earliest works, just as it is

with the Assyrian sculptures. They tend to show therefore that the Greek sculptor had not yet learned to model and carve in the round in marble and stone.

There are early records of statuary being made in marble. Pliny says the first of all distinguished for marble carving were Dipœnus and Scyllis, who worked together at Sicyon. They were born in the island of Crete during the existence of the empire of the Medes, before Cyrus began his reign in Persia, about the fiftieth Olympiad (about 580 B. C.). They

FIG. 92.—PERSEUS KILLING MEDUSA. SELINUS METOPE.
In the Museum at Palermo.
Cast in the British Museum.

FIG. 93.—HERCULES CARRYING OFF THE CECROPES (*robbers*).
SELINUS METOPE.
Cast in the British Museum.

are named by Clemens of Alexandria as the sculptors of statues of Castor and Pollux at Argos, of Hercules at Tiryns, and Diana at Sicyon. It is also related by Cedrenus that, in the time of the Emperor Theodosius at Byzantium, was to be seen a statue of Minerva Lindia of 'smaragdus' stone (*verde antico?*) four cubits high, the work of Scyllis and Dipœnus, which had formerly been sent by Sesostris, the Egyptian tyrant, to Cleobulus of Lindus. These references are so far interesting and important as showing with fair probability that these statues were sculptures in the round.

Numerous examples of archaic sculpture in bronze and

FIG. 91.—WARRIORS HUNTING.

Assyrian bas-relief in the British Museum.

FIG. 95.—WARRIOR OF MARATHON.
Inscribed "Work of Aristocles."
Found in Attica.
In Athens Museum.

FIG. 96.—ULYSSES (?) MARBLE.
Inscribed in Oscan Characters.
In Naples Museum.

marble, some of hammered-out work, are to be seen in all the museums, a large proportion of which are bas-reliefs representing the figure in profile. Good examples are Figs. 95, 96, which show a general resemblance to the Assyrian rather than Egyptian sculptures, as well as those found at Selinus (Fig. 92). The sharp features with the turned-up nose and smiling mouth and the short, crisp, formal curls at the forehead are characteristic of archaic Greek work and are seen again in the small full-length Apollo represented in Fig. 97 where we also notice the stiff attitude with one leg slightly advanced.

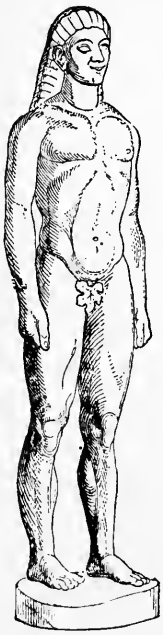


FIG. 97.—APOLLO OF TENEA.
Munich Museum.

The important point to bear in mind is the general archaic condition of sculpture prevailing at a time extending from the first Olympiad, 776 B. C., to the middle of the sixth century B. C.; examples of which, all more or less resembling each other, have been found at Mycenæ, Xanthus, Miletus, Ephesus, the islands of Cyprus and Rhodes on the Asiatic side of the Ægean; at Selinus in Sicily, and throughout Magna Græcia; in Italy at Palestrina, Perugia, Cervetri, as well as in all Etruria far up on the west coast of Italy; in Greece proper, in the Peloponnesus at Sparta, Sicyon and Argos, Athens, and Ægina—then an independent island and always possessing a very vigorous school of sculpture, in bronze especially, though destined to yield the palm when Athens rose to her high state.

CHAPTER VI.

GREEK SCULPTURE.

*Temple Decoration.**

IN Ægina a temple of Athene was begun about B. C. 480—478, therefore about twenty-six years before the Parthenon was begun at Athens and about the same time as the victories of the Greeks over the Persians at Platæa and Mycale and the battles of Thermopylæ and Salamis. The temple was built of sandstone and coated with stucco in a method resembling that employed in the temple at Selinus in Sicily. Its gable statues and those of the Parthenon are the only examples as yet found of a complete pediment series, as they were designed to fill the architectural space. The Niobe figures in the Florence Museum are supposed to have formed a similar composition ; but this is not yet a settled point, though they have been placed in this form. The Æginetan statues (Fig. 98) are of marble and were purchased by the late King Ludwig of Bavaria and placed in the Glyptothek at Munich after having been very much restored by Thorwaldsen at Rome. The western pediment is that given in our illustration ; and the subject, formerly thought to be the contest for the body of Patroclus, is now thought to be the fight of Greeks and Trojans around the body of Achilles, who lies at the feet of Athene. These eleven figures are in better preservation than those of the eastern pediment, which was so far destroyed that only five could be put together. Those of the east pediment are rather larger. They represent either Hercules and his companions fighting over the body of Laomedon or an incident of the expedition of Hercules and Telamon against Troy. Athene is represented

* For a description of temple architecture see pages 9–53.

closely after the hieratic type, considerably larger than the other figures, with her feet turned sideways, but her face to the front, while the mortal combatants are placed in various attitudes of strong action, but with most of the heads in profile. These statues are all carved in the round and are consequently most interesting as showing the great step in advance that had been made in technic capabilities. The study of the figure will be noticed as singularly accurate, even to the veins and tendons and the anatomy of the joints. This vigorous naturalism is carried out also in the spirited attitudes and in the fallen and falling combatants. The remarkable style in which the athletic points of the figures are displayed by the sculptor, has been attributed to the knowledge of the figure which he gained when he witnessed the Olympic games, the victors in which were honored by having statues made of them, often at the expense of their city or state, to be placed in the groves of the temples. Still greater realism was obtained by making the weapons—spears and bows—(shown as replaced by modern ones in the cut) as well as other parts of the details, of bronze. On some of the figures of the eastern pediment the hair of the beards was finished with curls of metal wire attached, while the eyes were painted, and the bloody wounds were also colored. This may have been an improvement of a

FIG. 98.—WEST PEDIMENT OF THE TEMPLE OF ATHENE AT ÆGINA. *Munich Museum.* [Height of Athene, 5 ft. 6½ in.]

later taste, but, whenever applied, portions of the color are still to be seen. The figures of sturdy, robust, and gladiatorial forms are short in the proportions and are under the size of life. The heads are particularly significant of the art of the time, carved with artistic skill, but all of one type, and having no other expression than the same complacent smile. Whether attacking to the death or whether in the last agony, there is the same smile. This was so probably because the sculptor did not allow himself to depart from the received type of the heroic countenance. It was not that he was incapable, or how could he have modeled the body so exactly with an accuracy that

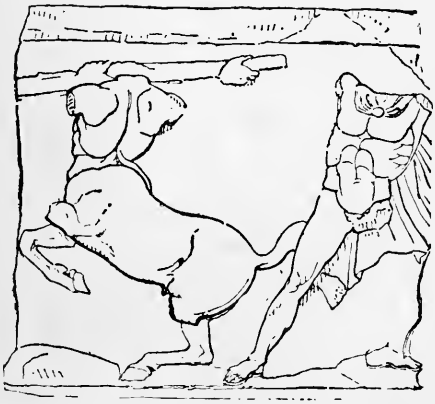


FIG. 99.—METOPE; FROM THE TEMPLE OF THESEUS. 29 INCHES HIGH.

perhaps even approaches to dryness? Still, it was not the portrayal of beauty that was the aim, but a forcible representation of a scene of historic interest with all the accentuation and emphasis that exact imitation could give without the expression of the countenance. As to the sculptor of these remarkable statues, two names are recorded as celebrated by Quintilian—Callon and Hegesias; but whether both were engaged upon them, as if one did the eastern and the other the western pediment, is not related.

The Athenian Style.

At Athens we have already seen what the style of sculpture during the time of Pisistratus and his successors was in the

stiffness and archaic forms of the draperies (560—490 B. C.) and we have noted the absence of any sculpture in the round in marble, at least so far as discovery has hitherto gone. But art and especially architecture had advanced. When the bones of Theseus were found in Scyros, one of the islands of the Ægean, by Cimon in 469 B. C., the oracle directed that Athens should be their guardian; and a temple called the Theseum was built to do honor to the remains of the great hero and king of Athens. The pediment of this temple, which is of Pentelic marble, contained statues; but they have been destroyed. Some of the metopes and the sculptured friezes in

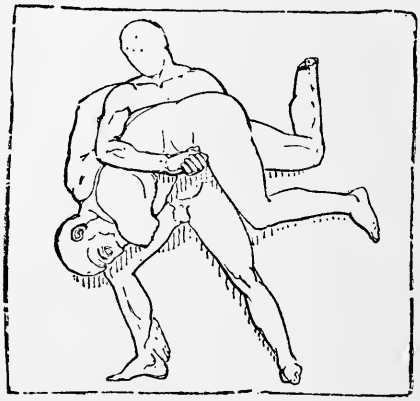
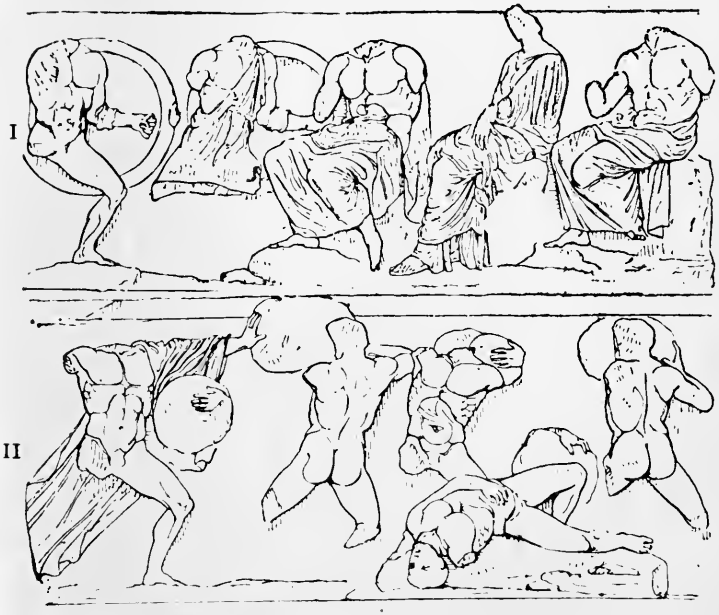


FIG. 100.—METOPE; THESEUS OVERCOMING THE WRESTLER CERCYON.

high relief at the east and west ends are still in their ancient position. Figures 99 to 102 show some of them.

The subjects of the frieze are, at the east end, the battle of the gods and the giants, and, at the west, Theseus fighting with the Centaurs. Theseus, it will be remembered, killed the Minotaur, conquered the Amazons, and subdued the Centaurs at Thebes. Referring to the illustrations it will be observed what an extraordinary advance there is in these figures from the style of the Æginetan statues; the forms are well-proportioned, the head not too large, and the muscles displayed in the swelling, lifelike movement of muscles in action. The one figure in which the sculptor evidently in-

tended to show his knowledge of the anatomy of the back, perhaps the most difficult of any, is most remarkable (Fig. 102). There is nothing finer than this throughout the Parthenon frieze. Indeed, it will be admitted on comparing these Theseum sculptures with those of the Parthenon, that the former are of such excellence as to have been well worthy of being examples to the sculptors who, a few years afterwards, were engaged under Phidias.



FIGS. 101, 102.—TEMPLE OF THESEUS FRIEZE. I. THE GODS WATCHING THE BATTLE. II. THE BATTLE OF THE GODS AND GIANTS.

It is important to understand that these sculptures of the Theseum must have been studied by Phidias and his contemporaries and that they must have raised the art to a very high standard, such as would inspire the loftiest ambition in those who were afterwards intrusted with the works of the Parthenon. It is not known whether Ageladas, the master of

Phidias, was the sculptor who designed these fine works; but, if he were, we might imagine that some of these figures are to be ascribed to his pupil, destined to become the master famous forever as the greatest in classic sculpture. Other able sculptors of the time were Onatas of Ægina and Calamis, whose name is associated with bronze work and who is distinguished as the sculptor of the Apollo Alexicacus.

It is known that Phidias finished his great statue in ivory and gold in the Parthenon in the third year of the 85th Olympiad, 438 B. C., when he must have been about 58 or 60 years old, if born as presumed between the 70th and 72d Olympiads; therefore it is quite possible that he might have been engaged upon the sculptures of the Theseum as a young man. That he must have acquired the reputation of being the first sculptor in Athens at the time the Parthenon was determined upon by Pericles, is only what is to be concluded; otherwise, such an important work would not have been placed in his hands.

The Grand Style of Phidias.

We have arrived now at a period in ancient art when at Athens, the center of the civilization of the world, the Parthenon, the most beautiful example of architecture, adorned with the grandest works of sculpture, was created. Phidias was intrusted by Pericles with the general design and direction of this great national work (454—438 B. C.), while two architects, Ictinus and Callicrates, are also recorded as the practical builders and probably the designers, with Phidias, of the temple. The whole world of art, ancient and modern, has always with one voice extolled the architecture and the sculpture. It has been pronounced "of all the great temples the best and most celebrated; the only octostyle (eight columns wide) Doric temple in Greece, and in its own class undoubtedly the most beautiful building in the world." The architecture of the Parthenon has already been described (pages 16–27).

The subject of the Parthenon sculptures has received an immense amount of learned investigation, particularly by the German archæologists, and especially by Michaelis, who may be said to have almost exhausted the materials. It would

be impossible, within any practical limits, to place before the reader the arguments as to the identification of the various figures. We shall therefore content ourselves with a brief statement of the conclusions that have been reached.

The Frieze (page 51). The frieze sculptures represent the famous procession in honor of Athene the patroness of the city. "On the birthday of the goddess the procession which conveyed the *peplos* (a robe in this case embroidered with mythological figures) to her temple, assembled in the outer Kerameikos (quarter of the modelers) and passed through

FIG. 103.—FROM THE FRIEZE OF THE PARTHENON, 47½ INCHES HIGH.

the lower city round the Acropolis, which it ascended through the Propylæa (page 17). During its passage through the Kerameikos the *peplos* was displayed on the mast of the ship which was propelled on rollers. On the eastern frieze the delivery of the *peplos* is represented in the presence of certain deities (Fig. 106). Toward this central point converge two lines of procession, which, starting from the west side of the temple, proceed along its northern and southern sides toward the center of the eastern front." Beginning with the western frieze, the start of the horsemen under the direction of one of the marshals, and the figures of men in various attitudes

of mounting and riding, display the wonderful power of the ancient Greek sculptor in representing the horse and his rider (Fig. 103). Nothing can be finer in composition than many of these groups of complex forms or more striking than the effect given with such very low relief. Along the northern frieze the horsemen are continued in crowded though admirably composed throngs. Amazing inventive faculty is shown in the variety of attitude and unflagging spirit and lifelike energy characterizing the figures. As Mr. Newton remarks—"In the 125 mounted figures in this cavalcade we do not find one single monotonous repetition. . . A rhythmical effect is produced by the contrast of the impetuous horses and their calm steadfast riders." Several figures carrying vases, others with trays holding offerings of cakes, and others leading the cows to be sacrificed are remarkable for freedom

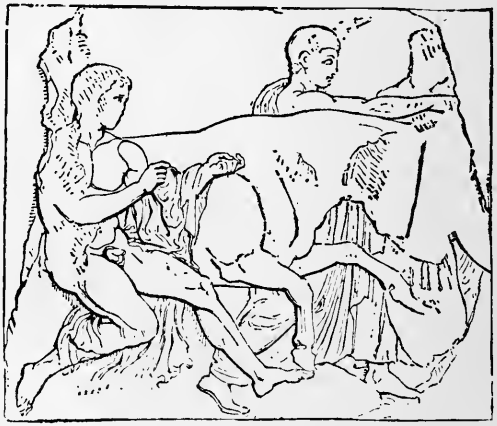


FIG. 104.—PART OF THE SOUTHERN FRIEZE OF THE PARTHENON.

and naturalness (Fig. 104). These last were the offerings contributed by the colonies to the great festival. On the eastern frieze we see the two great lines of the procession meeting over the entrance, where a group of magistrates receive the advancing procession on either side. Here are two groups of twelve seated male and female figures in pairs, six on one side and six on the other. Between these are five

standing figures (Fig. 106), representing the offering of the *peplos*. The beautiful maidens of Athens, draped and carrying jugs, are noble figures in graceful and stately attitudes.

The central portion of the eastern frieze has been the subject of much discussion, but, the faces as well as the attributes and other indications by which they could be identified, having suffered much injury, it is very difficult to judge the true interpretation.

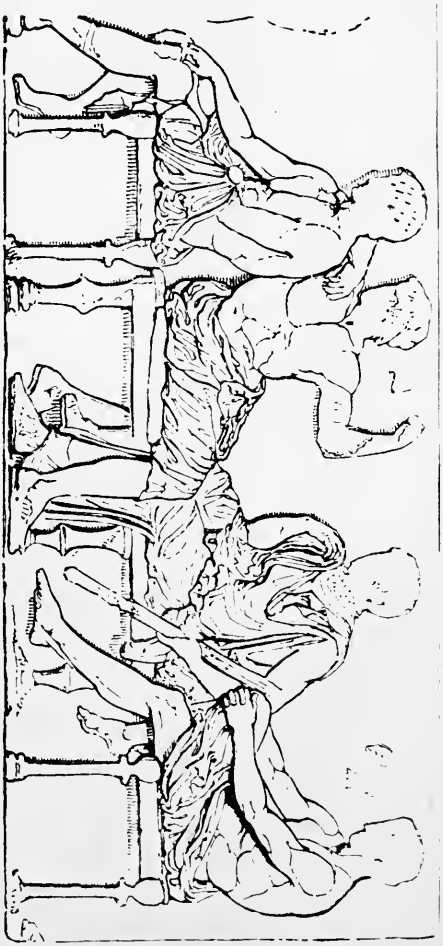


FIG. 105.—FRIEZE OF THE PARTHENON. HERMES, APOLLO, ARTEMIS, AND ARES.

The southern frieze is occupied with the chariots and the sacrificial cows and sheep, the offerings of the colonies, with numerous figures of drovers and others in every beautiful variety of attitude (Fig. 104). Each charioteer is accompanied by an armed warrior either in the chariot or at its side, not as in the northern frieze stepping into it. The horsemen on this south side are in more regular order and

not in a tumultuous throng as on the opposite side and therefore it has been supposed they are the trained cavalry of Athens. This part of the frieze is much injured.

FIG. 106.—FRIEZE OF THE PARTHENON. OFFERING THE PEPLOS.

The Metopes (page 51). These are the blocks sculptured with groups partly in high relief and partly in the round, which occupy the spaces known as *metopæ*. They were on the outside of the temple, above the architrave and were continued all round, 92 in number, viz.: 14 at each end beneath the pediments and 32 at each side. Of these scarcely thirty are well preserved, fifteen in the British Museum, one in the Louvre in Paris, the rest in their original positions in the Parthenon.

The metopes on the south side have for their subject the contest of the Centaurs and Lapithæ at the marriage feast of Pirithous. The twenty-eighth metope in the original series is pointed out specially by Mr. Newton—"for dramatic power in the con-

ception and truth in the modeling of the forms this metope is unrivaled" (Fig. 107).

The metopes of the north side are so much damaged that their subjects cannot be made out, but it is conjectured by Michaelis that they may have represented a scene from the taking of Troy; while Mr. Newton suggests they may have been a continuation of the series of combats of Centaurs and Lapithæ.

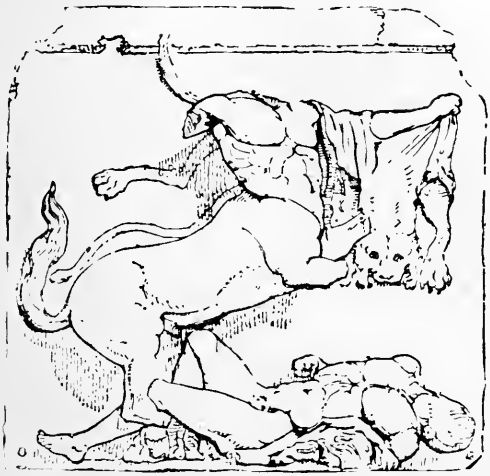


FIG. 107.—CONTEST BETWEEN THE CENTAURS AND THE LAPITHÆ. ONE OF THE METOPES OF THE PARTHENON.

Of the metopes on the west front, all except two remain in position, but are too much injured to be made out; the subject appears to refer to the battles of Greeks with Amazons.

The metopes of the east front are all in position on the temple, though much injured. The subject, however, is known to be the battle of the gods and giants.

The Sculptures of the Pediments (Figs. 108, 109) represented, as Pausanias describes, over the eastern end above the entrance to the temple the birth of Athene and over the western end the contest of Athene and Neptune for the soil of Attica. The

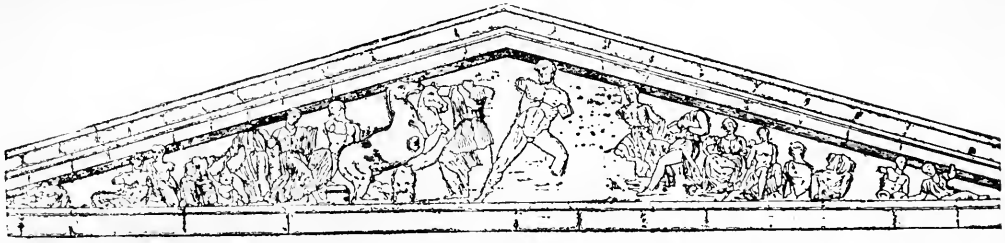


FIG. 108.—WESTERN PEDIMENT OF THE PARTHENON. THE CONTEST OF ATHENE AND POSEIDON FOR THE SOIL OF ATTICA.

FIG. 109.—EASTERN PEDIMENT. THE BIRTH OF ATHENE.

The gap was filled by the lost group of the Birth of Athene; the composition of which is unknown. The suggestion of M. de Quincy taken from an ancient bronze Etruscan engraved patera will be seen in Fig. 115.

Copied from the drawings by Jacques Carrey made in 1674, now in the Louvre, Paris.

N. B.—The letters refer to the statues as they are marked in the British Museum, and in the description in these pages.

broken statues and fragmentary parts are preserved in the British Museum.

The group which still remains on the pediment at Athens is considered to be that of Cecrops and Aglaurus. The heads are gone.

The identification of each of the figures of the pediment sculptures must still be a matter of discussion; and as we cannot pretend to give a statement of the various opinions

FIG. 110.—THE THESEUS, SOMETIMES CALLED THE IDÆAN HERCULES.

that have been given, we must refer the reader to the writers who have devoted so much attention to the subject. The drawings by Carrey (Figs. 108 and 109) afford, after all, the only trustworthy evidence as to the position of the statues.

The Eastern Pediment. The Birth of Athene.

The names given to the broken statues above mentioned are those which were proposed by the archæologist Visconti in 1816 in the memoir he read to the Institute of France at the time when the Parthenon marbles were acquired by the British Museum.

As to the *Iris* (Fig. 112), all agree with Visconti except Brunn, who proposes that it may be Hebe, and he also suggests that the whole subject was the moment before the birth of Athene. To this it must be an obvious objection that the figure displays the action of rapid movement upward and away from the central group. Hebe as the daughter of Zeus and Hera would not be an appropriate personage at the birth of Athene, while Iris as the messenger of the god has a

FIG. 111.—THE THESEUS, OR IDÆAN HERCULES.

most significant part and fills up the fine poetic conception of the subject.

The Horse's Head. (Fig. 113). Of the two heads of the horses belonging to the car of Selene, this has fortunately been preserved in much of its original beauty. The other, which remains on the pediment, is described as now a mere shapeless mass; though as it was hidden behind this head it may never have been so highly wrought as its fellow. Some interesting points are to be noticed in this grand head. It is inclined

downward, as in the descent of the departing Night before the advancing horses of the day at the opposite angle (Fig. 109, extreme left), whose fiery heads are tossed as they spring into the air out of the waves. "In the whole range of ancient art there is perhaps no work in marble in which the sculptor

Fig. 112.—Iris. On the Eastern Pediment of the Parthenon.

has shown such complete mastery over his material. The nostrils 'drink the air' as if animated with the breath of life" (*Newton*). It was highly praised by Goethe. It is a remarkable example of the genius of Greek art in uniting exact imitation of nature with the higher beauty of an ideal

type or in the words of Goethe "seems the revelation of a prototype ; it combines real truth with the highest poetical conception." This head, as seen in Carrey's drawing, projected in front of the cornice and the marble has been cut away to allow this. There are also some drill-holes behind the ears and on the nose, showing that a metal bridle was originally fitted to it, and the crest of the hogmane has holes which served to fasten some ornament.

The Three Fates. (Fig. 114.) Though headless now, two of them are seen in Carrey's drawing with their heads, the one nearest the angle turned toward the horses of Selene, the other toward the central group. The right arms of two were then only partially injured, but are now lost.

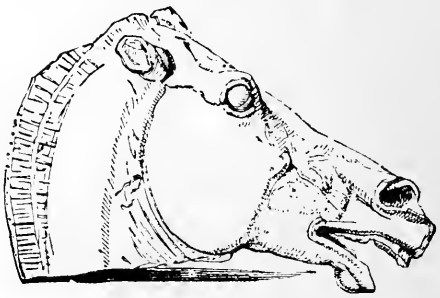


FIG. 113.—THE HORSE'S HEAD. CAR OF SELENE.

The Nikè, Victory. This figure, not in Carrey's drawing, was found lying on the ground below the pediment, and Visconti naturally concluded it had stood as Victory present at the birth of Athene. Some most interesting discoveries have been made among the fragments brought with the Parthenon marbles by Lord Elgin. In 1860 Mr. Watkiss Lloyd identified the thigh of this Nikè and in 1875 the knee was recognized and these have since been added to the statue. Wings of marble were attached to the shoulders, where are to be seen the deep sinking for their attachment with holes for metal dowels. The position of the Nikè in the pediment would depend on these wings; as, if they

were much raised, it must have stood nearer the center than it is placed in the Museum.

Prometheus or *Hephæstus.* A mutilated statue in the Museum at Athens, which was found on the east side of the Parthenon in 1836 and was unknown to Visconti. "The action of the shoulders and muscles of the back suggests the notion of a figure about to strike with both arms lifted above the head" (*Newton*). It is considered to be either that of Hephæstus, who according to the ancient myth cleaved the head of Zeus with his ax to accomplish the birth of Athene,—as represented on the *patera* (Fig. 115), showing him standing with his ax—or that of Prometheus, to whom Attic tradition preferred to attribute the deed. De Quincy proposed that this *patera* might be taken as an authority for the central group of the pediment and he gives a restoration from it in his great work above referred to.

FIG. 114.—THE FATES, ON THE EASTERN PEDIMENT OF THE PARTHENON.

The Western Pediment.

The mutilated statues of the western pediment as seen in Carrey's drawing (Fig. 108) are sufficiently complete to indicate the subject; but they were reduced to mere fragments and torsos before Stuart saw the Parthenon (A. D. 1751).

The general conclusion come to, first by De Quincy and Visconti, is that the composition of this pediment was arranged as if embraced between the two rivers of Athens—the Ilissus and Cephissus—the figures on the left hand side of Athene being Attic deities or heroes, while those on the side of Poseidon are marine deities, his allies as ruler of the ocean.

It remains to be said of these wonderful sculptures of the Parthenon, that it is impossible that they could all have been by the hand of Phidias; or that they could have been done in the time of certainly not more than sixteen years by any one man. A very decided opinion is given by M. Rochette: "These sculptures which emanated from the mind of Phidias and were most certainly executed under his eye and in his school are not the works of his hand. Phidias himself disdained or worked but little in marble. His most skillful pupils were Alcamenes and Agoracritus, and it was most probably the latter who executed the sculptures in alto-relievo in the two pediments. And they were artists without name, but certainly not without merit, who produced from the designs of Phidias the bas-reliefs of the frieze."

FIG. 115.—BIRTH OF ATHENE, ON A PATERA, OR CUP.

It is in vain to attempt to pronounce as to which of the beautiful fragments of the Parthenon statues is by the hand of Phidias; but by the common consent of critics the Theseus, the Ilissus or Cephissus of the nude figures, and the Fates and Ceres and Proserpine of the draped figures, are acknowledged to be the grandest examples of sculpture ever achieved. That Alcamenes, who was taught by Phidias, must have been

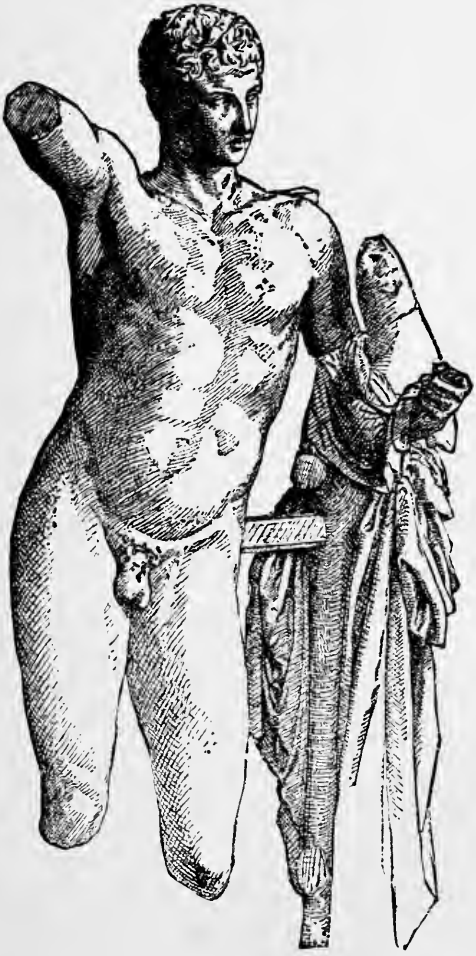


Fig. 116.—Hermes carrying the infant Dionysus. By Praxiteles.
Recently discovered at Olympia. A cast in the British Museum.

esteemed a great man, is shown by his having contended with Phidias in a competition for a statue of Athene.

Other Works of Phidias.

We have next to notice the other great works of Phidias, which, though utterly destroyed, were fortunately seen by Pausanias, whose descriptions of them remain. There were three great statues of Athene on the Acropolis. 1. The one of ivory and gold in the Parthenon, about 37 feet high not including the pedestal, which was about 10 feet. 2. A bronze known as the Lemnian because it was made at the cost of the people of Lemnos; this Pausanias and Lucian describe as the most beautiful and on this Phidias inscribed his name; it is not stated to have been colossal. 3. The bronze colossal statue known as Athene Promachus, which stood between the Propylæa and the Parthenon; it was between 50 and 60 feet high, and probably gilt, and it was cast from the spoils of Marathon. The crest of the helmet and the point of the spear could be seen far out at sea. The shield of the goddess was carved by Mys from the designs of Parrhasius the great painter. It was still erect in 395 A. D., and is said to have struck terror into the barbarian soldiers of Alaric.

The still more famous colossal statue by Phidias, the Zeus at Olympia in Elis, was his last great work. It was made between B. C. 438, the date of the consecration of the Parthenon statue, and B. C. 432, the year of his death, at Elis.

This was a seated statue of ivory and gold, 55 feet high including the throne. Strabo remarks that "if the god had risen he would have carried away the roof," and the height of the interior was about 55 feet; the temple being built on the model of the Parthenon at Athens, which was 64 feet to the point of the pediment. Pausanias has given a minute description of this renowned statue, from which we learn what an extraordinary amount of sculptured work was bestowed as accessory to the statue.

CHAPTER VII.

GREEK SCULPTURE.

The Successors of Phidias.

WE may now notice some examples of sculpture of the time of Phidias and of the later Athenian style about the middle of the 5th century B. C., which have been discovered at Olympia within the last few years in the researches made under the direction and at the expense of the German government. Olympia, it was known by the history of Pausanias, had its Temple of Zeus, the pediments of which were filled with statues by Alcamenes, who was a pupil of Phidias, and by Paeonius, and some of these pediment statues have been recovered in a very broken state and put together. The most important discoveries, however, are a heroic statue of Hermes carrying the infant Dionysus by Praxiteles (Fig. 116), and a Victory, the head and arms of which are lost, the work of Paeonius.

The subjects of the sculptures in the pediments of this temple are described by Pausanias. In the eastern pediment the "Contest between Pelops and Œnomaus" was by Paeonius, whose name has now been discovered carved in the marble; and in the western pediment the "Battle between the Centaurs and Lapithae" was by Alcamenes.

The recent recovery of the Hermes and the pediment statues by Alcamenes and Paeonius is of great importance, as enabling us to identify the work of Praxiteles, the sculptor of the famous Venus of Cnidus. The style and works of Praxiteles, however, will come in for consideration further on, while some other sculptures of this period must be noticed here.

Temple of Apollo at Phigalia.

Ictinus, the architect of the Parthenon, was employed to build a temple to Apollo Epicurius near the ancient Phigalia

in Arcadia at the time after the plague in 430 B. C. The frieze of this temple is in the British Museum, placed around the walls of the room in which are the casts of the Ægina pediments, called the Hellenic Room. They decorated the interior and the figures are in high relief, showing very strong action, with draperies much contorted and exaggerated in the curves of the folds, as if the sculptor having noticed the fine effect in the Parthenon figures had tried not only to imitate but to surpass them, and thus failed while becoming too artificial, and departing from the true forms sanctioned by Phidias. There is, however, much power and originality

FIG. 117.—FRIEZE OF THE TEMPLE AT PHIGALIA.
27¼ inches high. In the British Museum.

in some of these works, as in Fig. 117, of the Amazon being dragged from her horse. The name of the sculptor or sculptors of these is not known. There are twenty-three slabs, eleven representing the battle between the Centaurs and Lapithæ, the rest the contest of the Greeks and Amazons. This frieze was placed about twenty-three feet from the ground, being a little more than two feet in height. There were originally twenty-four slabs extending about a hundred feet in length, so that one is lost. The ruins were discovered in 1812 by the late Mr. Cockerell, R. A., Mr. Forster, and two Germans, Messrs. Haller von Hallerstein and Linkh, to whom we owe the recovery of the Ægina marbles.

Temple of Wingless Victory.

Portions of a frieze, now in the Elgin Room of the British Museum, from the little temple of Wingless Victory, near the Propylæa of the Acropolis at Athens, built in the time of Cimon, B. C. 450, should be noticed as showing work of the Phidian period. The drapery is larger in style than in the Phigalian reliefs, which these sculptures somewhat resemble. The subjects are Athenian warriors fighting with men, some in Persian, others in Greek dress. Relief slabs in Athens from the balustrades which ran along the edge of the Acropolis about the temple represent five figures of Victory, two of which (partly seen in Fig. 119) are leading a bull to

FIG. 118.—FRIEZE OF THE TEMPLE OF WINGLESS VICTORY.

sacrifice. "These reliefs are all in the finest style" (*Newton*). The grand treatment of the draperies is especially remarkable in the beautiful figure with one foot raised as if to tie the sandal (Fig. 120) in which the form is finely shown beneath the drapery.

The Mausoleum at Halicarnassus.

The discovery in the year 1857, of the ruins with sculptured figures in the round and friezes belonging to the famous tomb of Mausolus (died 353 B. C.)—which was raised to his memory by his wife Artemisia at Halicarnassus in Caria (Asia Minor)—was an event of very great interest. It brought to light the works of no less than five sculptors whose names had long

been known through Pliny's account of the structure which gave the name "Mausoleum" to all tombs that approached this in importance and magnificence of decoration. The Greeks called a tomb of this kind *Heroon*, and this particular one so surpassed all others that it was named among the seven wonders of the world. It was of Parian marble 140 feet high, pyramidal in form of steps supported on a peristyle of Ionic columns on a lofty basement. The whole was surmounted by a colossal group of a chariot and four horses, with Mausolus standing in it, and another figure—supposed to be either a goddess as charioteer or Artemisia herself, who died before the completion of the work. This group was the work of Pythis or Pythius, who was also the architect; while the various statues, lions, and reliefs—of which fragments more or less broken are preserved—were by Scopas, Leochares, Bryaxis, and Timotheus. The east side was the work of Scopas, the north of Bryaxis, the south of Timotheus, and the west of

FIG. 119.—FROM THE BALUSTRADE OF THE TEMPLE OF WINGLESS VICTORY. VICTORY LEADING A BULL.
A cast in the British Museum.

Leochares, as described by Pliny, who also names Pythis as the sculptor of the chariot and figures on the summit. In style these sculptures resemble the Phigalian reliefs, having similar strong action and flying draperies (see page 100). All these sculptors belonged to the later Athenian school; and it will be observed in their works, fine as they are, how far the art had already begun to decline. The head of Mausolus, a critic remarks, is "not of the Hellenic type, as he was a Carian," but it is remarkable in characteristic expression and as a portrait. The date of these works is about B. C. 352.

FIG. 120.—FROM THE BALUSTRADE OF THE TEMPLE OF WINGLESS VICTORY.

About 48 inches high.

The sculptors were selected from those who had already distinguished themselves. Scopas was a native of Paros, and he and Praxiteles, after the time of Phidias, were heads of the school of architecture and sculpture at Athens, which arose subsequent to the Peloponnesian War.

It is doubtful whether he or Praxiteles was the sculptor of the Niobe statues (Fig. 140) which were in Pliny's time

in the temple of Apollo Sosianus in Rome. A Greek epigram upon the Niobe is extant in which Praxiteles is thus named:

"I am she whom the gods from life had changed into marble.
Praxiteles by his art woke me from stone into life."

FIG. 121.—FROM THE FRIEZE OF THE TOMB OF MAUSOLUS, HALICARNASSUS. *29 inches high. British Museum.*

Bryaxis was of the school of Rhodes, where he made five of the smaller bronze colossal statues of the Sun God. In Cnidus he made other statues. Clemens of Alexandria says that some attributed works of Phidias to him, while Columella includes him with such masters as Polycletus, Lysippus, and Praxiteles.

Timotheus and Leochares appear to have been Athenians. Pausanias mentions the latter as the sculptor of several statues in bronze and in ivory and gold. Plutarch speaks of his "Rape of Ganymede" as his masterpiece. Of this a copy in marble is in the Vatican collection—a fine group of a figure, nude except a mantle across the neck falling down behind, raised by the eagle through the air, while his dog looks upward from the ground.

It will have been seen from what has been said of the works of sculpture which are known to have been executed by the sculptors contemporary with Phidias and by others who followed in the school which arose around him and who formed what is spoken of as "the later Athenian School," that none approached the great examples of the Parthenon. Sculpture then reached the highest point in the grandest style, whether in the treatment of the statue in the round

FIG. 122.—BAS-RELIEF OF MERCURY, EURYDICE, ORPHEUS.
Similar to the one at Naples, which bears the inscription in sharply cut letters.

or of bas-relief as in the frieze or of alto-relievo as in the metopes. As to the chryselephantine statues of Phidias, it may be concluded without hesitation that though we are compelled to rely upon descriptions only, they must have been works of the great master even more beautiful than the marbles. There is every reason to conclude that although color was applied, and the eyes perhaps even made to re-

semble life very closely by means of enamel of some kind, yet such was the perfection of form obtained, that these were minor adornments only adopted to give the appearance of real

FIG. 123.—BAS-RELIEF OF ELEUSIS. CERES, TRIPTOLEMUS, PROSPERINE. *Discovered 1859. In the Museum at Athens.*

life and complete the illusion in the minds of the worshipers. It may be difficult to reconcile the minute execution of detail in the work of Phidias with his grand ideal of the beautiful in simple form. But the descriptions recorded prove that

he carried "finish" to its extreme point, as Leonardo and other great artists after him have delighted in doing, as if to bestow the utmost of his art was a point of devotion and worship.

Of the few statues that can be confidently attributed to the contemporaries of Phidias, some are described among the examples (Chapter VIII.) of which the engravings will afford a general idea. The attention of the student should be given to the important statue (Fig. 133), representing an athlete of full life size, winding a fillet around his head, and considered to be a copy from a celebrated statue of Polycletus.

Certain bas-reliefs, resembling in style the art of Phidias, are to be found in the museums, such as that in the Naples collection, of *Orpheus*, *Eurydice*, and *Hermes* (Fig. 122), inscribed in letters of the time, two repetitions of which exist, one in the Louvre, the other in the Villa Albani at Rome; the alto-relievo of Perseus and Andromeda in the Capitol at Rome; a large relief, in Pentelic marble, of two combatants and a horse, in the Villa Albani.

The bas-relief of Eleusis, discovered in 1859 (Fig. 123), may perhaps also be considered to be of about this time. The names of the sculptors of these works are, however, unknown. In the works of the later Athenian school, at the head of which were Scopas and Praxiteles, the sublime ideal of Greek art was no longer sustained by any new creations that can be compared with those of the Phidian school; no rivalry with those great masters seemed to be attempted. The severe and grand were beyond the comprehension or probably uncongenial to the spirit of

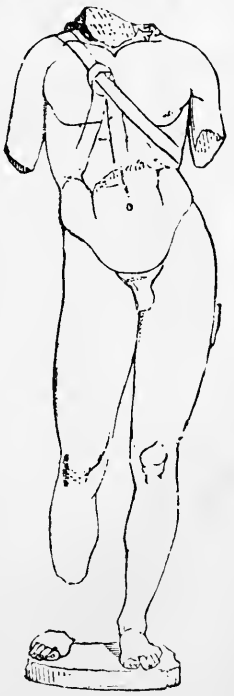


FIG. 121.—ICARUS: FORMERLY CALLED EROS.
Marble. In Brit. Museum. Found in the Acropolis, Athens. In the style of Praxiteles.

the age, which inclined toward the poetic, the graceful, the sentimental, and romantic, as we have already observed in speaking of the æsthetic tendencies of that period. The whole range of the beautiful myths found abundant illustration in forms entirely different from the ancient archaic represen-

FIG. 125.—THE CYMBAL-PLAYER. A BAS-RELIEF IN THE VILLA ALBANI. *Style of Scopas.*

tations, and in these the fancy of the sculptor was allowed the freest and fullest indulgence. Nymphs, Nereids, Mænads,

Fig. 126.—A Menad. Bas-relief. In the British Museum. *Fine example of drapery. Attributed to Scopas.*

and Bacchantes occupied the chisel of the sculptor in every form of graceful beauty (Fig. 128).

Macedonian Period.

After this epoch, to which so many of the fine statues

belong—repetitions in marble of famous originals in bronze—Greek sculpture took another phase in accordance with the social life and the taste of the age, which inclined toward the feeling for display that arose with the domination of the Macedonian power brought to its height by the conquests and ambition of Alexander the Great. Lysippus, a self-taught sculptor of Sicyon, was the leading artist of his time. He was evidently a student of nature and individual character, as he was the first to become celebrated for his portraits, especially those of Alexander. He departed from the severe and grand style, and in the native conceit of all self-taught men sneered at the art of Polycletus in the well-known saying recorded of him, "Polycletus made men as they seem to be, but I make them as they ought to be." He seems to have been the first great naturalistic sculptor. Pliny says that he made the heads of his statues smaller than the ancients and defined the hair especially, making the bodies more slender and sinewy, by which the height of the figure seemed greater. The "Apoxyomenos" (Fig. 132) may be regarded as a good example of his work; this however was in bronze and so probably were all of his statues. The taste for colossal statues was met by many from his hand, such as the Hercules of Tarentum and a Colossal Zeus, besides many others, to the number of several hundred, as related by Pliny and Pausanias. The famous Colossus of Rhodes has also been attributed to him, though more probably it was the work of his pupil Chares. His great bronze equestrian group of Alexander and the horsemen who fell at the battle of the Granicus, was brought to Rome by Metellus (146 B. C.) to be shown in his triumph. Such was the general influence of Lysippus under the high patronage of Alexander the Great, who only permitted him and Apelles the painter to represent him, that the style which then prevailed and retained its influence until the time of Augustus has been generally called "Macedonian."

A peculiar treatment of the hair in two strong rising curls above the center of the forehead is characteristic of this period. This arose from Lysippus having in his portrait busts and statues adhered so closely to this peculiarity in Alexander. It was to flatter Alexander that he gave this peculiarity to all his heroic figures and to the gods, and it is seen

in the head of the Colossus of Rhodes, as on the coins, and again in the heads of the colossal marble figures of Castor and Pollux on Monte Cavallo, at Rome, which—though bearing the names of Phidias and Praxiteles, absurdly carved upon the pedestals in letters of a kind not used before the time of Sixtus V.—are fine works, not of very high pretensions, but probably copies from bronze statues of the Macedonian period.

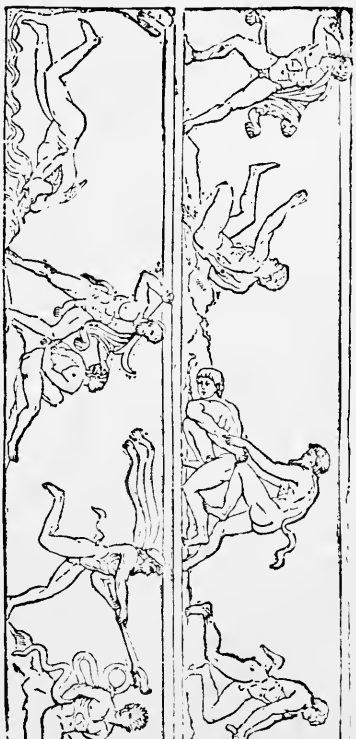


FIG. 127.—BAS-RELIEF ROUND THE CHORAGIC MONUMENT OF LYSICRATES. *12 inches high. In the style of Praxiteles.*

In the frieze around the Choragic monument of Lysicrates at Athens, sculptured in the year 334 B. C., the subject of which is Dionysus transforming the Tyrrhenian pirates into dolphins, a certain softness in the forms and picturesque action suggests the inquiry whether the reliefs may not be the work of Praxiteles, to whom as regards date they might be attributable. They are certainly not like the work of Lysippus (Fig. 127).

The discovery at Ephesus by Mr. Wood in 1873, of the ruins and sculptured columns of the famous temple of Diana, built B. C. 323, brought to light the "sculptured columns" (page 34) described by Pliny. The lower drum of one, six feet in diameter, is now in the Elgin Room of the British Museum. Six figures on this are full life size in mezzo-relievo, and in

the Hermes and the winged Thanatos the style of Lysippus may, it is thought, be recognized. That Scopas sculptured one of the columns is related by Pliny, but that any of these fragments in the Museum are to be attributed to him is not at present decided. Pliny gives the number of columns as 127, each the gift of a king, and says that thirty-six of them were *celatæ*, that is, "sculptured in relief"; their height was 60 Roman feet. Mr. Newton remarks that the surface of some of the square bases, which are sculptured in high relief, show the marks of a column having rested, and that "we thus have the combination of a richly sculptured shaft resting on a richly sculptured square pedestal, a combination which may have been the prototype of Trajan's and other triumphal columns." The pediments of this temple no doubt were filled with statues, as in other instances, but no one has succeeded in finding any fragments belonging to them, if they ever existed. The temple, which, as "The Artemisium," was celebrated as one of the seven wonders of the ancient world, in Roman times had become the depository of an immense treasure of works of art of all kinds, none of which have been as yet discovered. Goths burned and plundered the temple in the year A. D. 262.

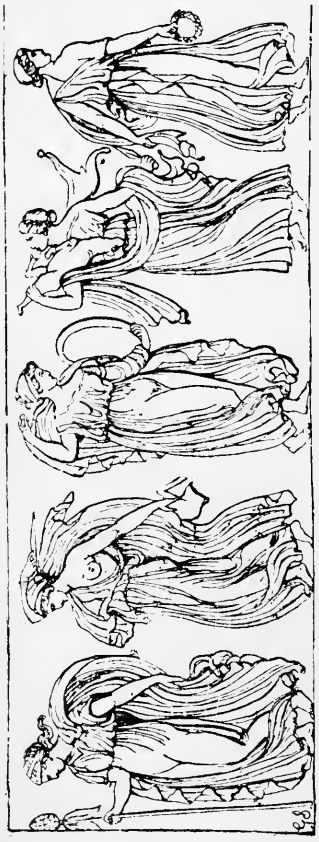


FIG. 128.—BAS-RELIEF IN THE VILLA ALBANI, ROME. MÆNADS AND BACCHANTES. *By Scopas.*

Other Schools.

Rhodes had unquestionable right to give her name to a school of sculpture, both from the great antiquity of the origin of the culture of the arts in the island and from the number (more than one hundred) of the colossal statues in bronze, of the Sun God, at the head of which stood the great Colossus by Chares, who was the most renowned pupil of Lysippus.

The Rhodian school is also distinguished by those remarkable examples of sculpture in marble of large groups of figures—the Toro Farnese (Fig. 141) and the Laocoön (Fig. 138). In these works—which are described among the examples—there is the same feeling for display of artistic accomplishment that has been noticed as characteristic of the Macedonian age, with that effort at the pathetic, especially in the Laocoön, which belongs to the finer style of the later schools, as displayed in the works of Scopas and Praxiteles, as seen in the Niobe figures and others.

At Pergamus, another school allied in style to that of Ephesus arose, of which the chief sculptor was Pyromachus, who, according to Pliny, flourished in the 120th Olympiad, B. C. 300—298, with Eutychides, Dahippus, Cephisodotus, and Timarchus. Pliny also mentions a great work by many artists (*artifices*) representing the battles of Attalus against the Gauls, in which Pyromachus, Isigonus, Stratonicus, and Antigonus were engaged (lib. xxxv. c. 8). Pergamus was raised to the highest importance under Attalus (B. C. 247—197) and Eumenes II., his successor, who adorned it with many fine buildings and founded the famous library. A statue of Æsculapius by Pyromachus was a work of some note in the splendid temple at Pergamus and is to be seen on the coins of that city. It is also conjectured that the well-known "Dying Gladiator" and the group of Pætus and Arria of the Villa Ludovisi are copies of bronzes by Pyromachus (*Scharf*). However this may be, the subjects are evidently taken from scenes that occurred at this time and were characteristic of the Gauls, who constantly slew themselves and their wives and children rather than fall into the hands of their conquerors. The vigorous naturalistic style of these statues, surpassing anything of preceding schools in the effort at expression, may be taken as characteristic of the

school of Pergamus, then completely under Roman influence.

But all question as to the nature of the sculptures was set at rest by the discovery of many large works in high relief by the German expedition at Pergamus in 1875. These are now in the Museum at Berlin. They are of almost colossal proportions, representing, as Pliny described, the wars of Attalus and the battles with the Giants. In these the nude figures especially show the effort to display artistic ability and great energy in the action. In these points there is observable a connection with the well-known and very striking example of sculpture of this order—the "Fighting Gladiator," or more properly the Warrior of Agasias, who, as is certain from the inscription on his work, was an Ephesian.

The equally renowned statue of the "Apollo Belvedere," finely conceived and admirably modeled as it undoubtedly is, bears the stamp of artistic display which removes it from the style of the great classic works of sculpture.

FIG. 129.—FIGURE ON THE FRIEZE OF THE MONUMENT OF LYSICRATES.

Thought to Resemble the Theseus of the Parthenon.

CHAPTER VIII.

GREEK SCULPTURE.

Examples—Arranged Alphabetically.

[Abbreviations: m., marble; b., bronze.]

AMAZON, m; 6 feet, 5 inches, Berlin. This claims to be a copy of the bronze of Polycletus and one of the five made in competition for the Temple of Artemis at Ephesus, by Polycletus, Phidias, Cresilas, Cydon, and Phradmon. At least seven are known besides this: two in the Vatican, one of which, the Mattei statue, also claims to be after that of Polycletus; two in the Capitol, one in the Louvre, one in Vienna Museum, and one at Petworth House. They all bear some resemblance one to the other, but are different, some being wounded. The Vatican statue distinguished as the "Mattei Amazon," is loosening her bow, with the right hand over the head, a quiver at her left side, a shield by the right leg on the tree-trunk, the battle-ax, and a helmet at her feet. On the left ankle is a spur, as in the Berlin figure. The other "Amazon" of the Vatican is wounded, has the right arm raised over the head, while the left falls by her side. A very fine head of an Amazon is No. 150, British Museum.

APOLLO BELVEDERE. Heroic size; m. Carrara. Height, 7 feet, 2 inches. Vatican. Once thought to be a repetition in marble of a bronze, by Calamis, but now considered to be of the time of Lysippus. Being of Carrara marble, it was most probably executed at Rome. Formerly considered to be the most beautiful of antique statues, but since placed in an inferior rank in art. It may represent Apollo either as the destroyer of the Python and protector from evil or, as Pausanias described the statue of Apollo by Calamis, as the protector after the

FIG. 130.—WOUNDED AMAZON.

M. Berlin Museum. Differs from the others chiefly in having no quiver or shield, and the left arm supported on a pillar. Much restored.

plague had left Athens, having the serpent, the emblem of the healing art, twining around the Delian olive (lib. i. p. 6, 20). Visconti took this view, while Winckelmann thought he had just discharged the arrow that killed the Python. The small snake upon the trunk, however, would not warrant the latter opinion and evidently refers to the healing power of the god, as it does in statues of Æsculapius. A bronze statuette in Count Stroganoff's collection has the ægis in the left hand as in the figure, No. 131.

It was found at the close of the fifteenth century in the ruins at Antium where the "Gladiator" or "Warrior" of Agasias was. It was purchased by the Cardinal delle Rovere, afterwards Julius II., being one of the first works of the Vatican collection.

Restorations.—The entire right forearm and left hand were supplied by Montorsoli when employed by Clement VII. Therefore it is entirely a matter of conjecture whether the original statue in bronze held a bow or the ægis or simply had the hand extended.

APOXYOMENOS. Heroic;

m. Greek. Height, 6 feet, $5\frac{3}{4}$ inches. Vatican. This fine statue is an example of the school of Lysippus and considered to be taken from the famous bronze mentioned by Pliny as re-

FIG. 81.—APOLLO BELVEDERE.

In the Vatican. The left hand restored in this cut as holding the ægis.

moved by Tiberius from the baths of Agrippa to his own palace, and restored in consequence of the clamor of the people. It is also remarkable as representing an athlete using the

strigil. The die held in the right hand is an addition of the modern restorer.

This copy of the celebrated statue was found in the Viccolo della Palme in the Trastevere, Rome, in 1849, and, though in many pieces, nearly complete.

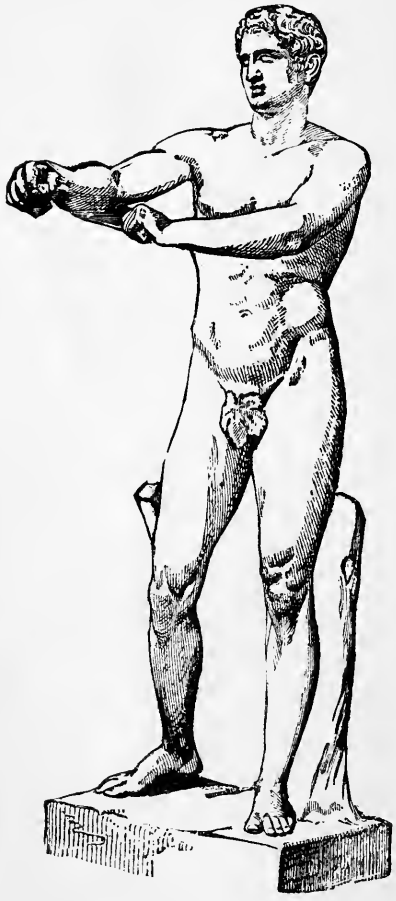


Fig. 132.—The Apoxyomenos.
Vatican. Athlete using the Strigil.

Restorations.—Part of the nose, and the fingers of the right hand with the die.

Diadumenos. Life size; m. There are two Diadumeni in the British Museum; this one known as the Farnese statue and the other as the Vaison statue, from having been found at that place in France. Both are supposed to be copies of the statues by Polycletus referred to by Pliny (lib. xxxiv. c. 8), one of a young man—"*Diadumenum fecit molliter juvenem*"—the other of a youth of manly form "*idem et Doryphorum viriliter puerum.*" This Farnese statue may be the soft and graceful figure, the Vaison statue, the strong, square-built, young athlete. The last named is also defective in the left hand and the fillet. Both rest with one leg at ease, an attitude peculiar to statues by

Polycletus and seen in the Doryphorus at Naples.

DIANA *with the Stag.* Heroic, m. Parian ; height 6 feet, 7 inches. Louvre. It is not known where or when this statue was found ; it has been in France a long time, and was probably one of the 184 that Primaticcio brought from Rome for Francis II. It was once at Versailles, hence called "Diane de Versailles," also "Diane à la Biche."

Restorations.—Barthélemy Prieur is said to have done a little too much to the surface, the feet having got something of the style of Germain Pilon and Prieur (*Clarac*). The left arm is by the sculptor Lange of Toulouse, done in the Louvre before 1809. *Restorations.*—The nose, ears, part of neck, right hand, half of forearm; left, with arm to the deltoid; right foot and upper part of leg. Stag, nearly all.

A work of the first century, A. D., if not by the same sculptor, probably of the same period as the Apollo Belvedere (M. Fröhner, Louvre Cat.). Many repetitions exist, one at Holkham.

DISCOBOLUS OF MYRON. Above life size ; marble ; height, 5 feet, 8 inches. British Museum.

There are no less than five statues like this, all copies of the famous bronze by Myron, which is described by Quintilian (A. D. 40) and afterwards by Lucian (A. D. 120), and copied on gems and coins still in existence. A small bronze in which

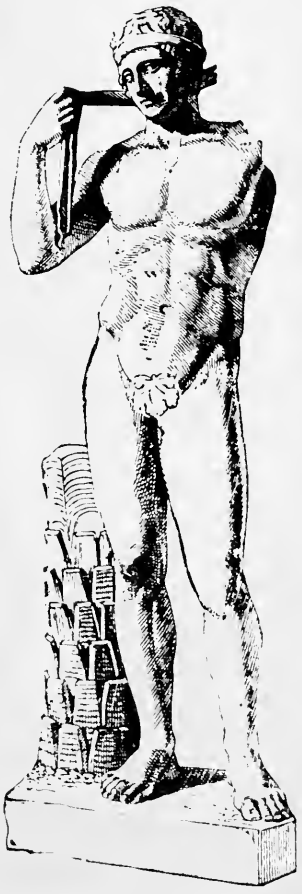


FIG. 133.—THE DIADUMENOS.
British Museum. The left arm and shoulder lost.

the head is turned back is in the Munich Museum.

Myron was born about 480 B. C.; he was a pupil of Ageladas of Argos and fellow-student with Polycletus and contemporary with Phidias. He became celebrated about 431 B. C. for his works in bronze. especially for his "Cow lowing, with her calf," which stood in the great square of Athens in the time of Cicero.

FIG. 131.—DIANA WITH THE STAG OF BRAZEN FEET (*Ceryneia*). *In the Louvre.*

The action and motive of the figure are readily understood, and could not be more concisely described than in the words of Lucian, who saw it at Athens. "The discus-player bending down as if about to throw, and looking back toward the hand that holds the discus, with one knee bent as if prepared to rise after the cast. That is the Discobolus, the work of Myron."

FAUN OF THE CAPITOL. Life size; m. Pentelic. Height, 5 feet, $7\frac{3}{4}$ inches. Capitol, Rome. Often called the "Faun (or Satyr) of Praxiteles," being thought to be a copy of the bronze so far-famed that it was spoken of at the time as "famous." It is the "Marble Faun" of Hawthorne's romance. The folds of the skin sometimes erroneously called the *nebris*, but which is that of the panther, indicate the sharper forms which would be chosen by an artist working in bronze. The grace of line in the figure, amounting to what would be termed elegance, and

the expression of the head mark the style as that of the later Athenian sculptors.

THE DYING GLADIATOR. Above life size, m. Height 33 inches, length, 66 inches. In the Museum of the Capitol, Rome.

FIG. 135.—THE DISCOBOLUS. *British Museum.*

Though long called "The Dying Gladiator" to distinguish it from the "Fighting Gladiator," this fine statue is now more properly called a "Dying Gaul," or a "Gaulish Herald,"

who has been mortally wounded or may have slain himself. The large horn on the ground, within which he lies as though it had slipped off his shoulders, has been considered to be that carried by heralds. The twisted ring of metal around the neck is a *torque* such as was worn by the Gauls. The expression of the face and the whole figure is finely portrayed, and with strong realistic truth, very characteristic of the Pergamus school. It was found in the ruins of the Garden of Sallust in 1770 and was once in the gallery of the Villa Ludovisi, Rome. It was purchased by Clement XII. and was taken to Paris among the spoils of Napoleon. It is considered to be a work of the time of Hadrian.

FIG. 136.—FAUN OF PRAXITELES.
Capitol, Rome.

THE LAOCOÖN. Heroic; Grechetto marble; height, 5 feet, 10 inches. In the Vatican, Rome. This fine group was found in 1506 in the Baths of Titus where Pliny said it was placed —not in a vineyard on the Esquiline Hill as stated by F. di Sangallo. This was in the pontificate of Julius II. while

Michelangelo was engaged upon his great works at the Vatican. That great sculptor is said to have called it "a wonder of art." Pliny speaks of its being in the palace of the Emperor Titus (lib. xxxvi. c. 5). Michelangelo, who with Christoforo Romano was directed to examine it, pointed out that it was not of one block, but of three,—one for the son on the left, another for the figure of Laocoön to the knees, and the third for the rest of the group. It has, however, been since found to be made of six blocks. When dug up, the right arm of Laocoön was gone as well as the shoulder and the

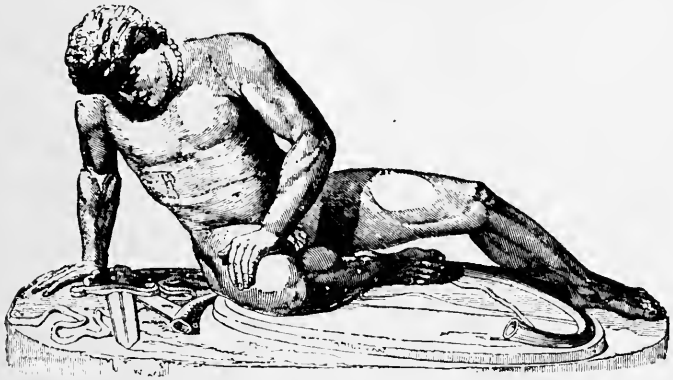


FIG. 137.—THE DYING GLADIATOR.
In the Capitoline Museum, Rome.

pectoral muscle; the right arm and foot of the younger son and the same parts of the elder were also broken off and lost. Skillful restorations were made by different Italian sculptors.

Lord Macaulay has pronounced the essay on Laocoön by the German critic Lessing to be the greatest critical work of modern literature.

MINERVA—THE PALLAS OF THE VATICAN. Heroic, draped; m. Parian. Height, 6 feet, 10 inches. This statue has been restored with the attributes of "Minerva Medica," the serpent raising its head by her side, a spear in her right hand, the arms, the Corinthian helmet and ægis, with mantle over the shoulders. It was found in the temple of Minerva Medica on the Esquiline, Rome.

This statue was for a long time in the possession of the Giustiniani family and afterwards passed into the collection of Lucien Bonaparte, from whom it was eventually purchased by Pope Pius VII. and added to the Gallery of the Vatican.

FIG. 138.—LAOCOÖN AND HIS SONS.
The work of the Rhodians, Agesander, Athenodorus, and Polydorus. In the Vatican. But with the arm as restored by Montorsoli. The right arms and legs of the sons restored by Cornacchini.

It represents the goddess as the beneficent protector and preserver of health by her wisdom. The drapery is an especially good example of the grave dignity given to the figure by the toga so admirably sculptured.

The form of the helmet is not that of the Athene of Phidias, seen on the coins of Athens, but that found on the coins of Corinth.

Restorations.—Right arm and hand with spear and the serpent, emblem of health and long life, as seen in statues of Æsculapius.

THE NIOBE GROUP—14 figures. Life size; m. Florence Gallery. A very celebrated group of statues, which once adorned the temple of Apollo Sosianus at Rome. They were referred to both by Horace and Pliny as the work either of Scopas or Praxiteles.

Probably none of the original figures remain; those that are at Florence are only a part of the copies made, for some do not belong to the subject and have merely been supplied to make up the number. The pedagogue and son are not at Florence, but in the Louvre, and are a very inferior group found at Soissons in France.

The head of Niobe is almost proverbial as an example of the pathetic (Fig. 140). It was the favorite study of Guido, as is seen in his pictures.

There is a head of Niobe in Lord Yarborough's collection which is considered to be finer than that of the statue.

FIG. 139.—THE MINERVA OF THE VATICAN.

In the Vatican there are two "Daughters of Niobe" from another group. In the Munich Museum is a very fine nude kneeling figure in Parian marble much injured, the arms and head lost, of the son of Niobe looking up, which is called "Ilioneus." There is also one of the sons lying on the ground. In the Capitol Museum, Rome, there is one of the kneeling sons.

FIG. 140.—NIOBE AND HER CHILDREN. (Center Group.)

Now in the Florence Gallery.

Most of these statues were discovered before 1583, at Rome, and placed in the Villa Medici, having been obtained by the Medici family, in whose palace they were till Pierre Leopold had them removed to Florence in 1776.

It is not decided whether the statues belong to the same group and whether they formed a pedimental or merely a semi-circular arrangement. Also it is a question whether Apollo and Artemis did not belong to the group; and there is in the British Museum a bas-relief of the subject with those deities.

Restorations.—These are so very numerous in arms, hands, feet, and some legs that it is impossible to name them all.

Toro Farnese. Colossal group; m. Grechetto. Height, 12 feet, 4 inches, on square base. Naples Museum. By Apollonius and Tauriscus of Rhodes. This is the group described by Pliny, representing Dirkê being tied to a bull by Amphion and Zethus, the sons of Antiope, who thus revenged the insult of their mother, whose husband, Lycus king of Thebes, had forsaken her for Dirkê. Antiope, according to some versions of the story, interposed to save her rival, but according to others Dirkê was dragged about by the bull till she was dead and was then thrown into a well, which to this day is called the well of Dirkê.

So much that is expressive in the heads and figures not being due to the ancient sculptor, but to the restorer Bianchi under the direction of Michelangelo, the group is chiefly valuable as an example of the ambitious style of colossal work which characterized the later Rhodian school after the time of Lysippus, when it was brought to the extreme by Chares in his Colossus. The lyre hung upon the tree and the Pandean pipes are in allusion to Amphion's skill in music: "Amphion by his singing moved the stones" (Horace). The wild animals, with sheep and oxen carved on the base, describe the pastoral life led by the sons of Lycus on Mount Cithæron when expelled by him with their mother.

Pliny tells us that this grand work was brought from Rhodes to Rome and that it was cut out of a single block of Greek marble and that Asinius Pollio purchased it in the time of Augustus. It was much broken and some parts entirely gone—as the head of the bull, for example. It was

placed in the court of the Farnese Palace, where Michelangelo superintended the restorations by Giov. Battista Bianchi. In 1786 it was removed to Naples and suffered further injuries in the transport, which had to be restored ; it was then placed

FIG. 141.—TORO FARNESE.
In the Naples Museum.

in the Villa Reale and after remaining exposed to the weather for many years it was removed to the Royal Museum by order of Francis I.

A cast of this fine work is in the Crystal Palace.

THE TORSO BELVEDERE. Heroic; m. Pentelic. Height 5 feet 1½ inches. Vatican. By Apollonius, about 336 B. C. The celebrated torso is often called after Michelangelo because he studied it so profoundly and made it his great example for sculptors. Flaxman borrowed it for one of his compositions of the Apotheosis of Hercules. That it is a Hercules is shown by the remains of the Nemæan lion's skin on the thigh and the rock. On the rock is cut the name of the sculptor who was careful to show that he was an Athenian.

Venus of the Capitol. Heroic; m. Parian. Height, 6 2-10 feet. This statue has a nobler character in the form and is altogether a more complete work than the "Medici Venus"; it is also much larger. It has the special interest of being nearly as perfect as the ancient sculptor left it. Flaxman said, "an example of more dignified and less insinuating beauty than the 'Venus de' Medici,' and certainly a copy from one of the three enumerated by Pliny among the works of Praxiteles."

Restorations.—Only the tip of the nose and two of the fingers.

It was found at Rome toward the end of the eighteenth century near the "Suburra di monti."

FIG. 142.—THE TORSO BELVEDERE. *In the Vatican.*

VENUS DE' MEDICI. Life size; m. Parian. Height, 4 feet, 11½ inches. Florence, in the Tribune of the Uffizi; by Cleomenes of Athens.

In allusion to the birth of the goddess from the foam of the sea, is the dolphin, on whose back are sporting the two boy deities, Eros and Himeros. The hair is bound up as the Horæ were said to have done it. The ears are pierced and no doubt once had ear-rings, and on the left arm is the mark of an armlet.

FIG. 143.—VENUS.
Resembling the Statue in the Capitoline Museum, Rome.
British Museum.

It was found in the Forum of Octavia or Hadrian's Villa at Tivoli about 1680, with other beautiful statues, among which was the knife-sharpener, "L'Arrotino."

It was brought to Florence in the Pontificate of Innocent XI., in the reign of Cosmo III. di Medici, and placed in the gardens of the Medici in the sixteenth century, and was placed in the gallery of the Uffizi in 1680.

Restorations.—It was broken into thirteen pieces; the head was off, the trunk injured, the thighs broken, the feet, the arms, and hands almost entirely gone. Fortunately the fractures were so regular that the pieces were easily joined with the exception of some parts in the trunk. The right arm and hand and the left from the elbow were quite lost, and these were supplied by Bernini. This accounts for some of the affectations shown in the position of the arms and hands. These are not at all of the antique character, and the statue is much grander without them, as indeed it should always be when studied from. The plinth is also modern, the ancient one

having been too much broken to be used. The Greek inscription was accurately copied.

"Cleomenes, son of Apollodoros the Athenian, did it." He is spoken of by Pliny as a sculptor of the highest repute for his female figures. The son of this sculptor is thought to be he whose name is cut upon the tortoise at the foot of the statue called Germanicus in the Louvre, No. 184.

It is thought to bear some resemblance to the famous Venus of Praxiteles, the first representing the goddess nude, of which some idea is obtained from the coins of the time of Caracalla and Plautilla. Old copies in marble of the Venus of Cnidus are in the Vatican, and an especially good one in the Glyptothek at Munich. An antique marble copy of the "Medici Venus" in the Louvre (156) has the arms, which are modern, slightly different from Bernini's in the Florence statue. The left foot and some toes of the right are also new. This belonged to the Campana collection, and was found at Porto d'Anzo (Antium).

FIG. 144.—VENUS DE' MEDICI.
In the Tribune of the Uffizi Gallery.

A statue in the Dresden Museum closely resembles the "Medici Venus," the legs however being lost from about half of the thighs. A small bronze in the British Museum is in this attitude.

VENUS OF MILO or MELOS, the name of the island in which it was found. (*Venus Victrix.*) A half-draped heroic-size statue, the arms and left foot broken off. Marble. Height, 6 feet, 8 inches. In the Louvre, No. 136. Corallitic marble, like ivory in color, and very close in the grain.

The name of the sculptor is not known, but this beautiful statue is considered by Clarac to be of the school of Praxiteles. But being partly draped some think it to be of an earlier time. Others have attributed it to Alcamenes and to Agesander. By Overbeck it is considered to be of as late a time as that

FIG. 145.—VENUS OF MELOS.
In the Louvre. The left foot added.

of Augustus. Mr. Newton would place it about 250 B. C. It was found in 1820 by a Greek peasant in getting up the roots of a tree, when the whole fell through into a hollow place which proved to be a tomb in the rock. The bust was first found, and then the trunk in two parts, separated where the drapery begins, at the hips; but the head was not separate, being perfect with the exception of the nose; the left foot was quite lost. A hand holding an apple was found.

FIG. 146.—THE WRESTLERS.
In the Tribune of the Uffizi.

It may be noticed that the attitude suggests that some object was held resting on the knee, such as a shield. A bronze statue in a somewhat similar attitude, now in the Louvre, is a winged figure of Victory holding a shield and inscribing it, which was found at Brescia about twenty years ago. There is also a resemblance in attitude to the Venus of Capua in the Naples Museum. M. Fröhner is of opinion

that the left hand with the apple belongs to this statue, but the right hand held the drapery. M. Claudius Tarral, sculptor, has made the most accurate investigation of the fragments and agrees in this opinion. He notices that certain irregularities in the forms show that the sculptor was not a copyist but essentially an originator, working from his own ideal. The right cheek is rather larger than the left and the corners of the mouth are not exactly alike and the drapery is simple and finely designed so as to avoid all folds not essential to the

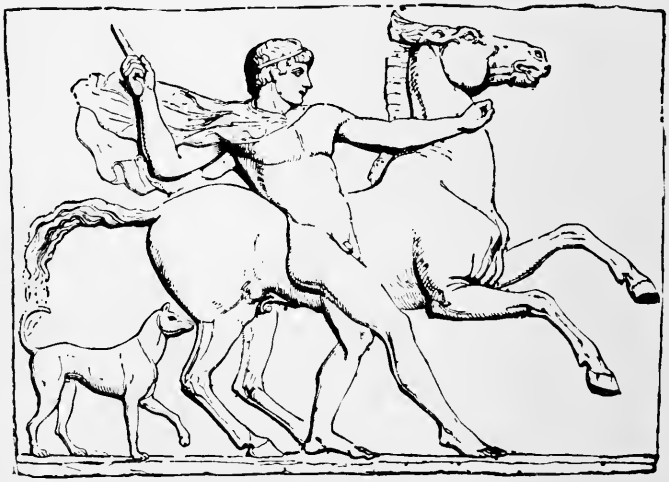


FIG. 147.—CASTOR. Bas-relief in British Museum.
Said to be Archaic.

position and not interfering with the harmony of the figure.

THE WRESTLERS Group; m. Height, 2 feet, 10½ inches; length, 3 feet, 11 inches. Florence Gallery. A most remarkable group, although much of it is new. The immense difficulties of such a work are surmounted with wonderful skill, and the knowledge of the figure shows a great mastery of the technical part of the art. It represents a deadly struggle, not a mere throwing to the ground, which was another kind of game; in this the upper figure is about to deal a finishing blow upon his victim. It is a good example of choice of

motive. It belongs to the later style of Greek art and has been connected with the Niobe figures from having been found in the same place and sold in one lot with them to the Medici family. Winckelmann thought they belonged to that group in accordance with another account of the Niobe catastrophe, which says that the sons were wrestling when it happened. In treatment it recalls the Laocoön group and is classed in the School of Rhodes by some German critics.

Restorations.—The heads, the left arm and foot, right leg from knee of the upper figure, the right arm and leg above knee of the lower are modern. It is, however, maintained that they are antique ; the head of the conquered wrestler being retouched only.

APPENDIX.

PAGE 9. The statement that "Greek architecture did not include the arch" is qualified by the recent discovery of two cases of the arch in Greece which date back to the early period here under consideration. These discoveries would make it possible or probable that the customary view that Greek architecture ignored the arch may be owing to the destruction of the monuments in which it occurred. It is undoubtedly true that the arch construction was never employed in temples. Egyptian architecture employed the arch in utilitarian construction, although it is never found in the temples, and instances are known at Thebes dating to the XVIII. Dynasty (about 1800 B. C.) of arches in brick work. The arch was also used in Assyria. These facts are implied in the reference to a "deliberate selection" and "exclusion" on the part of the Greeks, which occur on page 10. For a reference to the arch as found in the theater at Sicyon, see the "American Journal of Archæology," Vol. V., p. 278. Vaulted passages have also recently been found in the theater of Eretria.

PAGE 10. "The building was to a much greater extent designed for external than internal effect . . . . its most telling features and best sculpture were on the exterior." It is undoubtedly true that, as distinct from Egyptian temples, those of the Greeks had a far more symmetrical and beautiful exterior; but it must not be forgotten that the temple was the shrine of a statue which was—in the best periods of Greek art—an object of sublime grandeur, colossal size, great cost,

and a supreme effort of Greek art (see reference to these statues of gold and ivory on pp. 62, 84, 98). It is not likely that the Greeks were indifferent to the decorative interior effect of the apartments intended to hold these statues.

PAGE 14. The implication that the remains of Mycenæ and Orchomenos belong to Greek art indicates the belief of all students on this point, down to a very recent date. Since the excavations of Dr. Schliemann at Mycenæ, Tiryns, and Orchomenos, the opinion has begun to gain ground that "Pelasgic" art was that of a race entirely distinct from the Greeks, scattered through the archipelago and settled in various strongholds on the shores of Greece—whose civilization was largely influenced by Egypt and preceded that of the Greeks by several centuries at least. The pottery, metal-work, jewels, etc., found by Dr. Schliemann in tombs at Mycenæ are thoroughly foreign to the style of early Greek art and have suggested and given color to this theory that they belong to a distinct race, whose ascendency must have been broken before the Greeks made their appearance on the stage of history—otherwise traces of their influence on early Greek art would be apparent. Dr. Schliemann himself believed that he had discovered the remains of an early Greek civilization but the most recent summary on the subject of his excavations takes a contrary view. See "Schliemann's Excavations," by Schuchardt. The objects found in the tombs of Mycenæ are in the Museum of Athens, and conclusions based on their style of art would also cover the "Pelasgic" walls of Mycenæ, the "Treasury of Atreus" (which was undoubtedly a tomb) and the Gate of the Lions.

PAGE 19. The "Elgin Marbles" were brought to London in 1807–1808, but they were not purchased for the British Museum until 1816.

PAGE 22. "The architrave, it may be assumed, represents a square timber beam." Egyptian temples show two lines of stone beams corresponding to the Greek architrave and frieze. That this arrangement, and not that of timber construction, explains the Greek entablature is proven by the recently demonstrated Egyptian origin of the triglyphs. According to Professor Smith, "These closely resemble, and no doubt actually represent, the ends of massive timber beams." This

has been the current explanation with most writers on Greek architecture, but it has been recently proven that this is erroneous and that the triglyphs are carved ornaments, copying in relief the three recessed and colored bands which are frequently found, in the same arrangement, on the Egyptian stone cornice which corresponds to the Greek frieze. The first suggestion to this effect was long since made by Sir Gardner Wilkinson, author of the "Manners and Customs of the Ancient Egyptians," in a small work written as a Guide to the Egyptian Department of the Crystal Palace at Sydenham. The conclusive proof has been furnished by the German, Hans Auer, whose conclusions are adopted by Durm, the most recent German authority on Greek architecture.

PAGE 26. The theory that the optical refinements of Greek architecture were employed to correct optical illusions is that generally followed by English writers, in deference to the authority of the English architect Penrose, who made the masonry measurements (in 1845 and 1846), by which the purposed construction of these refinements was proven. This theory is, however, not the only one. The German architect Hofer advanced the idea (in 1838), that the curves were intended to enhance the effects of dimension in the Greek temples, according to the principles of curvilinear perspective. The same idea has been advanced by Émile Boutmey in his "Philosophie de l' architecture en Grèce" (Paris, 1870). The other refinements mentioned, and interpreted as corrections, have also been explained as purposed exaggerations of perspective effect—excepting the refinement mentioned as treated by Mr. John Pennethorne. This gentleman was the original discoverer of the Greek horizontal curves, which were first noticed by him in 1837.

PAGE 27. Aside from the colored patterns mentioned it is proven by the remains of color that the metope spaces and the space within the gable were painted Pompeiian red. (This would hold only of the backgrounds of the sculptured reliefs.) The triglyph bands were painted a low-toned blue and the grooves between the triglyphs were Pompeiian red. The fillet between architrave and frieze (Fig. 14, p. 20) and the cornices, were orange yellow or gilded.

PAGE 28. "We must look to some other country than

Egypt for the spirit which inspired the Ionic order." This supposition is that of all compendious authorities up to date, but it has been proven erroneous.

PAGE 34. "Ornaments borrowed from the Assyrian honeysuckle." See note which follows for page 50.

PAGE 39. "Assyrian honeysuckle." See note to page 50.

PAGE 43. "The setting out (or spacing), of the different columns, piers, openings, etc., is perfectly exact." This statement is an oversight. The precision and refinement of all masonry cutting have been proven by Mr. Penrose as stated. but he has also proven that there are absolutely no equidistant spacings in the parts of a Greek temple. All the columns and all the triglyphs are spaced at slightly irregular distances. These irregularities were undoubtedly intentional. They were possibly intended to avoid an appearance of tedious mathematical symmetry. It is possible that these irregularities are connected with a purposed scheme of exaggerating perspective effects from certain points of view. This has been positively asserted by Émile Boutmey for the metope spaces of the east front of the Parthenon. See reference to Boutmey's book in note to page 26. Although the irregularities mentioned have been proven by Mr. Penrose to exist, he has not attempted to explain them.

PAGE 45. "The flat stone roofs sometimes used by the Egyptians." This sentence implies a suggestion not intended by the author that flat stone roofs were not always used in stone buildings. Flat stone roofs were used invariably in the Egyptian temples.

PAGE 46. "Of all the forms of column and capital existing in Egypt, etc." For the Ionic capital as Egyptian see note to page 27. Clumsy forms of a Doric capital closely resembling early capitals found at Athens have been found recently in Egypt by the English excavator, Mr. Wm. M. Flinders Petrie, and are dated to the very high antiquity of the Pyramid Dynasties. That the elementary form (basket or bell shape) of the Corinthian capital is found in Egypt was long since pointed out by Sir Gardner Wilkinson (Crystal Palace Guide. 1857).

PAGE 48. The remark that the Corinthian capital is a development from the Ionic is just and highly important.

PAGE 50. The "fret" is derived from Egypt. The "honeysuckle" is attributed at present to Assyria by all compendious authorities but it has quite recently been conclusively proven to be derived both in Assyria and in Greece from an Egyptian lotus-palmette.

PAGE 53. The supposed "water-leaf" of Fig. 54 is a phase of the egg-and-dart molding (Fig. 47 and compare Fig. 48).

PAGES 70, 72. "To give any expression to the countenance requires a higher exercise of art . . . The Egyptians could perhaps have done it, but it was not in keeping with their intention and the genius of their art." This has been the usual view of Egyptian sculpture but it has been absolutely reversed by the Egyptian statues of the Pyramid period which have been discovered in recent years. Witness the "Scribe" in the Louvre, the "Wooden Man of Boulak" in the Ghizeh Museum, the statues of Nefert and Ra-hotep, and several others in the same Collection. A highly expressive and realistic portrait art is also occasionally found in later times of Egyptian sculpture—for instance the portrait bust commonly called that of Queen Taia, in the Ghizeh Museum.

PAGE 74. For the Gate of the Lions at Mycenæ as art of a race preceding the Greeks, see note to page 14.

INDEX.

NURSES AND NURSING.

By Lisbeth D. Price.

12mo, cloth, $1.25.

An exceedingly serviceable volume to all who have the care of the sick. It is a book for mothers and a recognized help in the home. The author is an experienced nurse and hospital matron and has had the active assistance of a prominent physician. The book is practical and accurate, and contains information which could not be obtained without much research and experiment.

What to do in emergency cases, how to proceed until a physician arrives, how the nurse may help the physician, how to read prescriptions and administer doses, and many other points bearing on practice in the sick room are ably and practically considered.

Substantially bound in cloth.

AMERICANIZED DELSARTE CULTURE.

By Emily M. Bishop.

12mo, cloth, $1.00.

This handbook does not purport to be a treatise on the Delsarte Philosophy; it does not relate to oratory, to dramatic expression, or to art criticism. It was written because of the large demand for a book telling of the "whys and hows and wherefores" of Practical Delsarte.

The author adopts an ideal standard of life—"the greatest good to the greatest number" and considers the Delsarte art of expression in a broad sense, as it may be of general benefit to all. *Americanized* Delsarte Culture relates to health and grace and includes expression and art. It is a practical Delsarte handbook.

For sale by all booksellers, or sent postpaid on receipt of price.

FLOOD & VINCENT, Publishers,

The Chautauqua-Century Press, *MEADVILLE, PA.*

LOG OF A JAPANESE JOURNEY.

By TSURAYUKI. Translated from the Japanese by Mrs. FLORA BEST HARRIS. Twelve original photogravure illustrations by the Japanese artist, TOSHIO AOKI. Printed and bound in close imitation of the books issued in Yokohama. 12mo, 50 cents.

"This little work is a classic in Japan, and a great favorite with the people. It was written in the tenth century, and contains a half-humorous account of a sea voyage from the small provincial town to the capital. As representing the innocent and cheerful side of Japanese life and thought, it is most interesting, and has all the delicacy of tone that distinguishes their best artistic work."—*Canadian Methodist Quarterly.*

"A charming unpaged booklet. . . . Stitched, bound and illustrated in Japanese style, its outward dress comports with its contents."—*The Nation.*

"An odd and entertaining little book."—*Presbyterian Observer.*

"A unique bit of literature."—*The Advance.*

THE FOUR GEORGES.

By WILLIAM MAKEPEACE THACKERAY. The text is embellished with decorations, portraits, and vignettes of beautiful design by Mr. GEORGE WHARTON EDWARDS. Printed in two colors. Large 8vo, richly bound in buff and white vellum, stamped in gold, with wide margins, flat back, rough edges, and gilt top. Price, $3.00.

"One of the finest specimens of book making, and a most attractive gift book. Seasonable all the year."—*Jamestown Journal.*

"The present publishers have given us a notably beautiful volume. We do not see what they could have done to make it more attractive."—*Nashville Advocate.*

For sale by all booksellers, or sent postpaid on receipt of price.

FLOOD & VINCENT, Publishers,

The Chautauqua-Century Press, *MEADVILLE, PA.*

Un